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The Elementary School Journal

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THE ELEMENTARY SCHOOL JOURNAL

Articles to appear in forthcoming issues

W. G. Whitford, School of Education, University of Chicago. *Empirical Study of Pupil-Ability in Public-School Art Courses, Part II.*

Ruby Minor, State Normal School, Trenton, N. J. *Project-Teaching in Grade Six.*

Joseph S. Taylor, District Superintendent of Schools, New York City. *Subtraction by the Addition Process.*

Carl T. Wise, Principal, Lincoln Junior High School, Duluth, Minnesota. *A Survey of Arithmetical Problems Arising in Various Occupations.*

J. O. Engleman, Superintendent of Schools, Decatur, Illinois. *Financing a School System.*

William S. Gray, School of Education, University of Chicago. *Methods of Improving the Technique of Teaching.*

Edith Parker, School of Education, University of Chicago. *The Partition of Africa—A Seventh-Grade Geography Unit.*

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Later numbers to be announced.

THE ELEMENTARY SCHOOL JOURNAL

Continuing "The Elementary School Teacher"

VOLUME XX SEPTEMBER, 1919 NUMBER 1

NOV 27 1919

Educational News and Editorial Comment

BOARDS OF EDUCATION, STATE BODIES

It will be remembered that attention was called some months ago to the controversy in New York City between the city hall and the board of education. The following letter from Mr. Finegan, who has just left the office of Deputy Commissioner of Education of the state of New York to become head of the school system of Pennsylvania, points out the significant court decisions on the matters thus brought up. The letter is of very great interest in view of the iteration which it gives to the important principle that a school is a state institution, not a local body related to the city hall.

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Our city school law of 1917 went a long distance toward obtaining that independence which a board of education should have in the performance of its official duties. The state-wide salary law of 1919 completes the work pretty effectively. Under the terms of that law, the board of education of each city is given the specific authority to fix the salary of each teacher and of every other employee in the school system.

In addition to these acts, we have just had two court decisions of great importance in this state. The Appellate Division recently held that the provisions of the city school law take precedence in every particular over a provision written in the city charter, and now comes a decision from the Appellate Division, in the New York Department, to the effect that the mayor is without authority or jurisdiction to direct his Commissioner of Accounts to investigate the board of education or to examine the auditor of that board. The decision is based upon the theory that a board of education is not a city board, that the functions of the board are not city functions, and that the authority of the mayor and his Commissioner of Accounts extends to city affairs and city officials only. It is a very clean-cut, sweeping opinion.

PROFESSIONAL ISOLATION

A principal of a Chicago school was recently discussing the method of developing educational reform within this system. He said:

> It can be done only from within. Chicago principals will not have an outsider coming in. It isn't our way. Chadsey was all right personally. He knew his business and he was full of ideas, but it was no use. The men in the principals' club can be reached only by somebody on the inside.

A state official from one of the leading states in the Union was commenting on recent doings in Chicago and said:

> The men of our state are prepared to fight from the floor, if necessary, any move to bring the Department of Superintendence to Chicago for its meetings at any time in the future. It isn't the board of education especially; that has been what it has been for years. But now the school people have shown what they are and they are likely to be left alone for some time to come. The rest of the country doesn't care to see one of its best men handled the way Chadsey was.

The desire to associate with insiders only is therefore likely to be fully satisfied. To the thinking of the present writer this is a pitiful situation. The Chicago system has festered for years. Teachers have fought boards; boards have fought their own appointees, the superintendents; district superintendents are afraid of principals; principals are afraid of their teachers. Solidly, they all unite against one thing—the importation of a strong man from outside. In the meantime does anyone ever come to the Chicago

schools for educational ideas? Is there being worked out here a model of self-criticism or self-improvement? Is intellectual leadership of the Mississippi Valley centering here in its metropolis? The answer is all too evident. The isolation grows and with it the evils of narrow exclusiveness. There are very few small cities on this continent which would tolerate the crude, antique, and broken-down system of so-called budgeting under which Chicago tries to carry on its schools. There is no adequate digest of even the most essential educational statistics of this city. There is absolute disregard of the first principles of modern professional training in the appointments made at headquarters and in what follows these appointments. Supervision throughout the system is woefully deficient. Political influence runs rampant in every quarter. There is nothing to promise a break in the circling around and around and around. Such is the fate that comes to a system bent on having no influences introduced from outside.

TEACHERS' COUNCILS

School systems have been slow to organize themselves on a democratic plan. Boards of education and superintendents have for the most part failed to see the importance of taking teachers into the government of the schools. Now the omissions of the past are leading to forms of organization in which teachers are asserting their rights and demanding a voice in the management of affairs. The spirit of these demands is not always wholesome. There is in some of the teachers' organizations a lack of feeling of responsibility which is easy to understand but which will have to be overcome if teachers' participation in school government is to be productive of good to the schools. It will not do for the teachers to make demands of the government and at the same time ask to become part of the government unless they are prepared to face its problems with wisdom and with a willingness to abide by practical adjustments.

Is it not time for schools to adopt the policy of trusting teachers with larger responsibilities and of demanding of them more intelligent and carefully considered solutions of school problems? Teachers have a right to ask for higher salaries, but they must become students of public taxation. Teachers want permanence of tenure. They must study the effects of such tenure on efficiency and must provide adequate guaranties of efficiency when the lash of possible dismissal has been dropped.

The kind of move which can be made at once in every school system in the direction of democratic distribution of power and responsibility was outlined in the *School Review* of October, 1918, by Superintendent Spaulding and is represented by the Teacher's Council of New York.

The constitution of the New York Council describes the organization and purposes of that body as follows:

I. The organization shall be known as the Teachers' Council.

II. The Teachers' Council shall have a twofold function:

1. The furnishing of information and the opinions of the teaching staff (principals and teachers) upon questions submitted by the Board of Education or by the Board of Superintendents.

2. The introduction of recommendations concerning any of the problems affecting the welfare of the schools and the teaching staff.

All final decisions shall be left to the Board of Education or the Board of Superintendents.

III. The Teachers' Council shall be allowed absolute freedom in its debates and deliberations.

IV. The Teachers' Council shall be composed of forty-five [45] representatives from such voluntary teachers' organizations as were in existence March 1, 1913, and of such other teachers' organizations as may thereafter be recognized by the Board of Education.

The by-laws give an idea of the range of the Council's activities in the list of standing committees which they present as follows:

a) An Executive Committee.
b) A Committee on Courses of Study, Syllabuses, and Programs.
c) A Committee on School Records and Statistics.
d) A Committee on Truancy and Delinquency.
e) A Committee on Vocational Interests.
f) A Committee on the Advancement of Pupils.
g) A Committee on Organization and Administration.
h) A Committee on Special Schools and Classes.
i) A Committee on Evening Schools and Recreation Centres.
j) A Committee on Professional Interests.
k) A Committee on Parents' Associations and Community Needs.

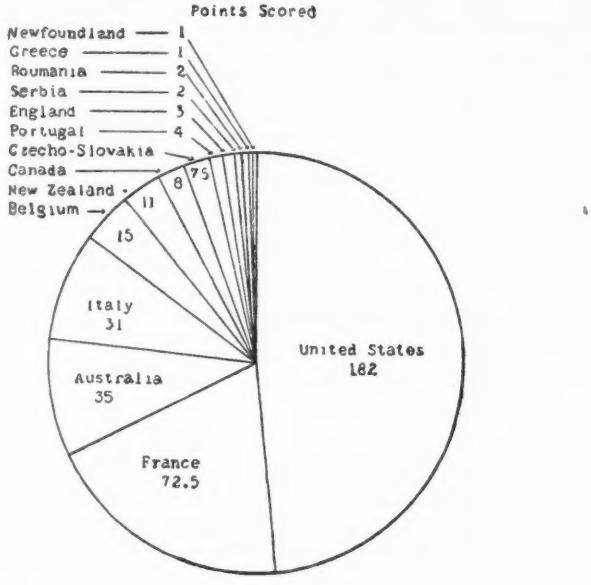
THE PHYSICAL AMERICAN

So much has been said about the revelations of the war regarding the need of more physical education in America that it is refreshing to get official and very decisive evidence on the side not usually stressed. The following information prepared by that well-known compiler of educational statistics, Leonard P. Ayres, comes from his office in the War Department where he is a Colonel in the General Staff and Chief of the Statistics Branch.

I am sending you with this some data showing the results of the Inter-Allied games between the athletes of the different armies in France.

The data have a bearing on our discussion as to whether or not there was evidence showing that the American troops were physically better than those of the other armies.

It is also worth noting that in the marksmanship contest the Americans won all the events, and in the individual rifle shooting they took the eighteen first places, and in the individual pistol shooting they took the eight first places.



RESULTS OF INTER-ALLIED GAMES

The following results of the Inter-Allied games held at the Pershing Stadium, Joinville-le-Pont, France, from June 22 to July 6 have been cabled by General Pershing. Seventeen nations were represented.

The United States won first place in baseball, basket ball, boxing, hand grenade throwing; shooting competitions; rifle individual, rifle teams, revolver individual, revolver teams; swimming competition; track and field; tug-of-war; wrestling. Second and third places won by the United States were not cabled.

France won first place in tennis singles, cross-country races, fencing, Rugby football, golf, modified Marathon, relay races Army of Occupation, rowing four-oared sculls; second place in soccer football, horse-riding competition, rifle and pistol teams, track and field, water polo; third place in boxing, rowing single scull.

Italy won first place in horse-riding competition; second place in fencing, basket ball, relay races Army of Occupation, broad jump. Australia won first place in tennis team match and doubles; second place in boxing, swimming. Belgium won first place in water polo; second place in cross country, wrestling, tug-of-war; third place in fencing. England won first place in rowing eight-oared sculls. New Zealand won first place in rowing single sculls; third place in four-oared and eight-oared sculls. Czecho-Slovakia won first place in soccer football; third place (tied) in wrestling.

DENTAL CLINIC IN RURAL DISTRICTS

The following report from the Department of Public Instruction of New Jersey describes a useful innovation which is worthy of imitation.

MOTOR DENTAL CLINIC FOR BURLINGTON COUNTY

A movement has been started in Burlington County to give dental service and teach oral hygiene to the children of the rural districts.

This is being done in a novel way. A motor dental ambulance, which was in the service of the United States Army during the war, has been purchased. This "movable dental office" is equipped with a modern standard dental chair and electric dental engine, the current for which is supplied by storage batteries. It has awnings and ventilators, has both gas and electricity for lighting, and carries its own water supply. Modern dentistry in all its branches is therefore possible.

The office can be moved from place to place without dismantling. It drives into the school yard and the dentist works during school hours.

Instruction is also given, in the classroom and during the work, in the care of the mouth, the teeth, and the general health.

The money necessary for this enterprise has been supplied by donations, obtained chiefly through the efforts of Miss Elva Hughes, county attendance officer.

This work was begun early in May and as much territory as possible has been covered during the last weeks of the school year. During one week the teeth of the children of three townships were examined and it was found that 90 per cent of the children so examined were in need of dental treatment.

Such a movement will not injure or antagonize the local dentist. When a child's teeth are examined a chart showing the attention needed is made in duplicate and one copy is sent to the parents. They can then, if they prefer, send the child to the regular family dentist. His business, therefore, will be increased rather than diminished, since this will not only add many children to his practice but will tend to educate the parents themselves to the need of dental care for adults as well as children.

CODE OF PROFESSIONAL ETHICS

This will be a year of great difficulty in supplying schools with teachers. The withdrawals from the profession have been heavy for several years. The number of new teachers trained for the service, especially during the last twelve months, has been deplorably small. The competition for teachers will be so strong that the question is sure to be raised again and again of transfers and new contracts. Under circumstances of this kind it is doubly important that teachers be reminded that there is a professional code which binds them to their contracts in no less degree than the civil code binds boards of education. The Michigan State Teachers' Association received from its committee on professional code so clear a statement of the principles of action which should guide teachers that the following selected sections may be quoted:

2. A clear understanding of the law of contracts is incumbent upon a teacher. Since a teacher should scrupulously keep whatever agreement is made, he should refuse to sign a contract unjust and humiliating in form.

3. It is unprofessional for a teacher to sign a yearly contract to teach for a wage that is not sufficient to cover living expenses for twelve months.

4. It is unprofessional for a teacher to resign during the period for which engaged. He may rightly ask to be released, by giving notice of not less than two weeks, but must in case of refusal abide by his contract.

5. It is unprofessional for a teacher to underbid a rival in order to secure a position.

9. It is unprofessional for a superintendent or other school officer to offer a position to a teacher without first determining the willingness of the teacher's employer to grant a release.

10. It is highly unprofessional for a superintendent or other school officer to visit, with a view to employment, a candidate at work, without the permission of his or her superintendent.

11. It is unprofessional for a superintendent to refuse to aid as uccessful teacher in securing worthy promotion within his own or another school system.

NORMAL SCHOOLS AND EDUCATION OF VARIOUS TYPES

There is a strong tendency in some normal schools to expand in the direction of a general college education. So far as the present writer knows, the following case reported in the official publication of the Wisconsin State Board of Education is the first in which a normal school has devoted a part of its energy to engineering education. The case is described as follows:

The State Board of Education, having recently asked for a report on college courses in the normal schools with special reference to the engineering course at Milwaukee, the Educational Committee recommends that the Board of Regents

of Normal Schools transmit to the State Board of Education the figures appended hereto, comprising a study of the cost of instruction in said engineering course, together with the following expression of opinion relative to that work:

That the opportunity for this work in the shops and factories of Milwaukee is an educational opportunity that should not be ignored nor neglected; that the course as organized and conducted by the State Normal School at Milwaukee under the plan adopted by President Pearse constitutes the foundation for an educational structure that may and should be elaborated; that the cost of the work now being done, considering the newness of the course is reasonable.

The Board of Regents of Normal Schools has never oulined a definite policy relative to this course. President Pearse saw the educational opportunity in Milwaukee and in view of the fact that no other institution seemed ready or desirous of taking advantage of the opportunity, the Board of Regents of Normal Schools acquiesced in the policy of the State Normal School at Milwaukee in establishing and conducting the engineering course.

The wisdom of expending funds appropriated by the state to train teachers for elementary schools for a purpose wholly foreign to elementary education may be called into question. Wisconsin, like every other state, is without an adequate supply of trained teachers. Indeed, the cry is long and loud from the state department in Madison for more teachers of any kind. Should not normal faculties then stick to their allotted task, using all the resources which the state can supply in the effort to meet the one aim for which their institutions were organized? There have been in recent years many discussions as to the rating of normal schools as colleges, and the facts have shown that these schools are in very large measure unstandardized. If now to college ambitions and to regular duties to the state are added professional courses organized without the ordinary safeguards of professional surroundings, what will become of both normal-school standards and engineering standards?

NATIONAL SOCIETY YEARBOOK

Co-operation is invited in the circular letter which has been sent out by a committee of the National Society for the Study of Education. Replies can be sent to the chairman or to any other member of the committee. The members of the committee are as follows: C. H. Judd, chairman; W. C. Bagley, J. C. Brown, C. E. Chadsey, L. D. Coffman, E. P. Cubberley, E. C. Elliott, H. C. Morrison, G. D. Strayer, and G. M. Whipple. Their letter is reproduced in full herewith:

A committee of the National Society for the Study of Education was organized last year and charged with the responsibility of making a report on new materials which can be used to enrich the curricula of elementary schools and

high schools. The committee is known as the Committee on Materials for Instruction. It plans to publish for the next meeting of the Society a Yearbook in which numerous examples will be presented of such new materials of instruction prepared by teachers in different parts of the country and not yet incorporated into the textbooks. Some teachers have worked out lessons in local geography or civics; some have worked out science problems; others have done something in history or in literature that is unique in its content. What is wanted is definite content material, not descriptive accounts of what was done.

This is not to be a Yearbook of hopes and ambitions, nor of general statements, but a Yearbook of actual material available for classroom use, with only so much descriptive material in each case as is necessary to tell how the material was made and employed. Too much emphasis cannot be laid on the fact that what is wanted is material usable in the schools. It is hoped that the Yearbook may serve as a stimulus to teachers and supervisory officers to work on the general problem of enriching the curriculum through co-operative effort.

The Yearbook must go to press on the fifteenth of November, 1919. That means that the material must be in the hands of the Committee before October thirty-first, 1919, if it is to be used.

COURSES IN RETAIL SALESMANSHIP

The Carnegie Institute of Technology has taken up the work of providing instruction for retail salesmanship as a major problem for next year. Professor Charters, well known for his writings on school methods and for his researches in grammar, is to be in charge of the work and will organize a department for the training of directors of schools for retail salesmen. He will also prepare the materials necessary for instruction along these lines.

The necessity of turning experts of the highest training to the task of preparing textbooks and material for instruction in practical courses is evidently coming to be recognized. It is a wholesome sign. The time was when those who would have trade training introduced in the schools thought of their tasks in very simple terms. All that seemed to them to be required was a school in which to operate and an experienced tradesman as a teacher. After much running to and fro and a great deal of waste, the obvious fact has come to the surface. Here, as in all forms of teaching, there must be material carefully arranged and methods of presentation expertly worked out. A new and promising chapter in courses in salesmanship has been opened.

News Items from the School of Education of the University of Chicago

PUBLICATION OF PARKER'S ELEMENTARY SCHOOL METHODS BOOK

Professor S. Chester Parker has just received from Ginn & Company the first copies of his latest book entitled *General Methods of Teaching in Elementary Schools*. This book is among the first in which the materials are organized on the assumption that the kindergarten and first six grades constitute a closely co-ordinated unit in public-school organization. Inasmuch as many of the illustrations are taken from the kindergarten and lower grades, the book will render a very valuable service in unifying the work done in these departments. The principles of teaching which are discussed are presented with unusual force and clearness through the use of numerous pointed illustrations selected from all grades of the elementary school. The book contains a large number of pictures, many of which are reproductions of classroom activities of the Elementary School of the University of Chicago. Professor Parker prepared the book for use in normal schools, kindergarten-training schools, and teachers' reading circles. It is another striking illustration of the valuable service which Professor Parker has rendered to education in general and to the School of Education.

USE OF INTELLIGENCE TESTS IN THE KINDERGARTEN AND FIRST GRADE

The children in the kindergarten of the School of Education are promoted to the first grade, or begin first-grade work, while still in the kindergarten, as soon as they are, in the judgment of the teachers, ready to profit by systematic training in reading, writing, and number. Although the teachers' judgments have proved reliable in most cases, the need of scientific methods of classifying pupils has been keenly appreciated. Accordingly, in the Spring Quarter of this year kindergarten children were tested with the hope that the results might throw some light on the problem of promotion. The test used was the Stanford Revision of the Binet-Simon Scale.

Thirty-five children were tested, eight of whom had had daily instruction for some time in reading, writing, and number, in

addition to other activities of the kindergarten. The average class grades of these children in the three subjects named were compared with their intelligence records as determined by the tests. The comparison showed close correlation between the two. This was in harmony with the results of Terman's investigations and suggested the desirability of using the intelligence tests as one means of determining which children should be promoted to the first grade, and how those who were promoted should be grouped. In addition, the investigation showed clearly that these tests could be used to advantage in classifying children when they first enter school, especially in determining whether given pupils should be placed in the kindergarten or in the first grade.

THE EYE-VOICE SPAN IN READING

Mr. G. T. Buswell, a candidate for the doctor's degree in the University of Chicago, has just completed a comprehensive study of eye-voice span in reading. This span is the distance by which the eye leads the voice in oral reading. The study was accomplished by the use of an apparatus which photographed the eye movements and at the same time made a record of the voice on a wax cylinder of a dictaphone. Photographs were made of the readings of pupils from all grades, except the first, and from each class of the high school.

The results showed that mature readers have a much wider eye-voice span than immature readers. The pupils who looked farthest ahead in reading were found to be the ones who had a high quality, a rapid rate, and a small number of fixations per line. The pupils who kept their eye and voice close together exhibited the opposite characteristics. The study also showed that pupils with a wide eye-voice span interpreted meaning in large units and regulated their span according to the position in the sentence, while pupils with a narrow span gave little attention to sentence structure. One outstanding fact revealed in the study is that mature readers keep their eye much farther ahead of the voice than immature readers. It also showed that this mature type of eye-voice relation is attained by some pupils by the end of the fourth grade.

Mr. Buswell's study is a distinct contribution to the series of investigations of reading problems which have been carried on during recent years in the laboratories of the School of Education.

SPACE-PROVISIONS IN THE FLOOR-PLANS OF MODERN ELEMENTARY-SCHOOL BUILDINGS

LEONARD V. KOOS
University of Minnesota

NATURE, MATERIALS, AND METHOD OF THE STUDY

Because of the perennial character of the problems in the domain of school architecture and especially because of the current focalization of attention upon these problems by the commendable efforts at standardization by the Department of School Administration of the National Education Association, some interest should attach to the findings of an investigation of the kinds of space-provision in the floor-plans of recently constructed elementary-school buildings. Such findings should throw light, among other things, on the kinds of space-provisions that are regarded as essential by those authorizing the construction of the buildings and on the recent tendencies in this phase of school architecture.

The elementary-school floor-plans used for the tabulations here presented were reproduced in the issues of the *American School Board Journal* during the decade 1908–17 (volumes XXXVI–LV), excluding only those plans which for any reason could not be used for such a study, e.g., because the lettering in them was indistinct owing to reduction in size of the original in reproduction; because a full set of floor-plans was not reproduced, one or more of the floors being omitted; or because, as obtains for many small communities, the plans were for a single building designed to accommodate both elementary- and high-school work. The total number of plans used in the tabulation was 126.

In preparation for the work of tabulation the writer first made a working list of kinds of space-provision by examining a score of floor-plans and noting the sorts of space-provision that had been made in them. The names of the 80 classifications found in this way were introduced into a mimeographed form which provided space for tabulation building by building, i.e., there was a column of blank spaces in which were to be recorded the number of times each space-provision had been made in each set of floor-plans.

Additional blank spaces were provided for other sorts of space-provision found which might not obviously classify under the kinds already listed. The task of recording the space-provisions in the mimeographed forms was done as an exercise by the members of a class in city school administration in the University of Washington. Notwithstanding the simple character of the task, the members of the class were given careful oral and written directions regarding the mode of procedure to be followed in tabulation. To each member of the class was assigned one or two volumes of the journal named. After the preliminary work of tabulation had been completed, the writer tested the accuracy of each student's report by checking over the space-provisions recorded for two full sets of floor-plans. When inaccuracies in the work of tabulation done by a student were discovered, all the floor-plans in the volume assigned to this student were rechecked by the writer. The use of this method of tabulating and of checking gives fair assurance of the accuracy of the findings. The entries on the mimeographed forms showed the *presence only*, *not* the *area*, of a space-provision in a floor-plan. This was owing to the fact that too few of the reproductions include dimensions.

The next step in assembling the materials of the study was the final one of making the number and percentage distributions of space-provisions as shown in the tables accompanying this report. In this final step provisions such as furnace-rooms, fanrooms, and coal-pits were excluded because it was found that for some buildings these were left undesignated in basement or ground-floor plans or were provided for in separate or attached structures, plans of which were not reproduced. It is believed that the numbers and percentages that would have resulted from a tabulation of such as were reproduced would not have been representative. The presence of vestibules, light-courts, space for stacks, corridors, etc., was also left out of consideration in the final tabulations.

The fact that the plans were for buildings erected in communities ranging in population from a few hundred to the second largest city of the country made it possible to give some attention to the differences in space-provisions by *size of community*. Tables I and II show a division of the plans into two groups: (1) those in communities of 10,000 population and less and (2) those in communities of over 10,000 population. As it was desired to test as to kinds of

TABLE I

KINDS OF SPACE-PROVISIONS AND NUMBERS AND PERCENTAGES OF FLOOR-PLANS OF ELEMENTARY SCHOOLS IN WHICH SUCH SPACE-PROVISIONS HAVE BEEN MADE

SPACE-PROVISION FOR	COMMUNITIES OF 10,000 AND LESS						COMMUNITIES OF OVER 10,000						ALL COMMUNITIES					
	1908–12		1913–17		1908–17		1908–12		1913–17		1908–17		1908–12		1913–17		1908–17	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1. Class-, grade-, or schoolrooms	27	100.0	29	100.0	56	100.0	32	100.0	38	100.0	70	100.0	59	100.0	67	100.0	126	100.0
2. Recitation rooms	1	3.7	3	10.3	4	7.1	5	15.6	5	13.2	10	14.3	6	10.2	8	11.9	14	11.1
3. Ungraded rooms									3	7.9	3	4.3			3	4.5	3	2.4
4. Open-air rooms			3	10.3	3	5.4	2	6.3	2	5.3	4	5.7	2	3.4	5	7.5	7	5.6
5. Kindergarten rooms	6	22.2	2	6.9	8	14.3	10	31.3	15	39.5	25	35.7	16	27.1	17	25.4	33	26.2
6. Science laboratories			1	3.4	1	1.8			2	5.3	2	2.9			3	4.5	3	2.4
7. Manual-training rooms or shops	5	18.5	7	24.1	12	21.4	19	59.4	21	55.3	40	57.2	24	40.7	28	41.8	52	41.3
8. Stock- or lumber-rooms	1	3.7	1	3.4	2	3.6	2	6.3	3	7.9	5	7.1	3	5.1	4	6.0	7	5.6
9. Domestic-science rooms or laboratories	4	14.8	7	24.1	11	19.6	16	50.0	17	44.7	33	47.2	20	33.9	24	35.8	44	34.9
10. Sewing-rooms			1	3.4	1	1.8	2	6.3	8	21.1	10	14.3	2	3.4	9	13.4	11	8.7
11. Cooking-rooms or laboratories	1	3.7	1	3.4	2	3.6	3	9.4	9	23.7	12	17.1	4	6.8	10	14.9	14	11.1
12. Dining-rooms			1	3.4	1	1.8	2	6.3	9	23.7	11	15.7	2	3.4	10	14.9	12	9.5
13. Pantry	1	3.7	1	3.4	2	3.6	1	3.1	3	7.9	4	5.7	2	3.4	4	6.0	6	4.8
14. Bedroom			1	3.4	1	1.8	1	3.1	4	10.5	5	7.1	1	1.7	5	7.5	6	4.8
15. Supply-rooms (for domestic science)			2	6.9	2	3.6	1	3.1			1	1.4	1	1.7	2	2.3	3	2.4
16. Library	6	22.2	10	34.5	16	28.6	11	34.4	10	26.3	21	30.0	17	28.8	20	29.9	37	29.4
17. Gymnasiums	1	3.7	2	6.9	3	5.4	6	18.8	12	31.6	18	25.7	7	11.9	14	20.9	21	16.7
18. Boys' playrooms	11	40.7	11	37.9	22	39.3	14	43.8	16	42.1	30	42.9	25	42.4	27	40.3	52	41.3
19. Girls' playrooms	12	44.4	13	44.8	25	44.6	15	46.9	20	52.6	35	50.0	27	45.8	33	49.3	50	47.7
20. Swimming-pools									3	7.9	3	4.3			3	4.5	3	2.4
21. Shower-rooms			2	6.9	2	3.6	5	15.6	11	28.9	16	22.9	5	8.5	13	19.4	18	14.3
22. Boys' dressing-rooms			1	3.4	1	1.8	2	6.3			2	2.9	2	3.4	1	1.5	3	2.4
23. Medical rooms	1	3.7	1	3.4	2	3.6	1	3.1	6	15.8	7	10.0	2	3.4	7	10.4	9	7.2
24. Nurses' rooms			1	3.4	1	1.8	1	3.1	4	10.5	5	7.1	1	1.7	5	7.5	6	4.8
25. Locker-rooms	2	7.4	1	3.4	3	5.4	3	9.4	3	7.9	6	8.6	5	8.5	4	6.0	9	7.2

TABLE I—*Continued*

KINDS OF SPACE-PROVISIONS AND NUMBERS AND PERCENTAGES OF FLOOR-PLANS OF ELEMENTARY SCHOOLS IN WHICH SUCH SPACE-PROVISIONS HAVE BEEN MADE

SPACE-PROVISION FOR	COMMUNITIES OF 10,000 AND LESS						COMMUNITIES OF OVER 10,000						ALL COMMUNITIES					
	1908–12		1913–17		1908–17		1908–12		1913–17		1908–17		1908–12		1913–17		1908–17	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
26. Boys' locker-rooms	2	7.4	1	3.4	3	5.4	1	3.1	7	18.4	8	11.4	3	5.1	8	11.9	11	8.7
27. Girls' locker-rooms	2	7.4	2	6.9	4	7.1	1	3.1	8	21.1	9	12.9	3	5.1	10	14.9	13	10.3
28. Cloakrooms or wardrobes	24	88.9	28	96.6	52	92.9	27	84.4	37	97.4	64	91.4	51	86.4	65	97.0	116	92.1
29. Auditoriums or assembly rooms	7	25.9	15	51.7	22	39.3	17	53.1	19	50.0	36	51.4	24	40.7	34	50.7	58	46.0
30. Gymnasiums and auditoriums combined							1	3.1	2	5.3	3	4.3	1	1.7	2	3.0	3	2.4
31. Stage in auditorium	5	18.5	14	48.3	19	33.9	12	37.5	19	50.0	31	44.3	17	28.8	33	49.3	50	39.7
32. Dressing- or anterooms (for stage)	4	14.8	10	34.5	14	25.0	7	21.9	12	31.6	19	27.2	11	18.6	22	32.8	33	26.2
33. Lunchrooms			2	6.9	2	3.6	4	12.5	2	5.3	6	8.6	4	6.8	4	6.0	8	6.4
34. Boys' lunchrooms	2	7.4	2	6.9	4	7.1							2	3.4	2	3.0	4	3.2
35. Girls' lunchrooms	2	7.4	2	6.9	4	7.1							2	3.4	2	3.0	4	3.2
36. Teachers' lunchrooms							1	3.1	3	7.9	4	5.7	1	1.7	3	4.5	4	3.2
37. Teachers' rooms	16	51.9	18	62.1	34	60.7	14	43.8	29	76.3	43	61.4	30	50.9	47	70.1	77	61.2
38. Teachers' rest or retiring-rooms			2	6.9	2	3.6	8	25.0	3	7.9	11	15.7	8	13.6	5	7.5	13	10.3
39. Emergency or rest rooms			1	3.4	1	1.8	1	3.1	5	13.2	6	8.6	1	1.7	6	9.0	7	5.6
40. Principal's offices	12	44.4	22	75.9	34	60.7	24	75.0	31	81.6	55	78.6	36	61.0	53	79.1	89	70.7
41. Reception or waiting-room	2	7.4	3	10.3	5	8.9	5	15.6	13	34.2	18	25.7	7	11.9	16	23.9	23	18.3
42. Assistant or vice-principal's offices							1	3.1	2	5.3	3	4.3	1	1.7	2	3.0	3	2.4
43. Janitor's rooms	5	18.5	8	27.6	13	23.2	12	37.5	12	31.6	24	34.3	17	28.8	20	29.9	37	29.4
44. Bicycle rooms	4	14.8	2	6.9	6	10.7	1	3.1	1	2.6	2	2.9	5	8.5	3	4.5	8	6.4
45. Supply- or storage-rooms	9	33.3	15	51.7	24	42.8	17	53.1	23	60.5	40	57.2	26	44.1	38	56.7	64	50.8
46. Book or textbook rooms			1	3.4	1	1.8	1	3.1	2	5.3	3	4.3	1	1.7	3	4.5	4	3.2
47. Board-rooms	1	3.7	1	3.4	2	3.6	2	6.3	1	2.6	3	4.3	3	5.1	2	3.0	5	4.0
48. Boys' toilets	21	77.8	25	86.2	46	82.1	30	93.8	35	92.5	65	92.9	51	86.4	60	89.5	111	88.2
49. Girls' toilets	21	77.8	25	86.2	46	82.1	30	93.8	35	92.5	65	92.9	51	86.4	60	89.5	111	88.2
50. Teachers' toilets	3	11.1	4	13.8	7	12.5	7	21.9	10	26.3	17	24.3	10	17.0	14	20.9	24	19.1
Total number in group	27		29		56		32		38		70		59		67		126	

space-provision the validity of the statement frequently made, that the decade under consideration was one of rapid change and development in the domain of school architecture, distributions were also made according to the half-decade in which the elementary-school building was erected. The numbers of buildings in each of the four groups resulting may be seen by reference to the lowest row of figures in Table I. In further description of the plans used in the study, it may be said that they have been assembled from 27 states, ranging from Maine to Washington and California, and from Minnesota to Mississippi and Texas; that the median communities represented by the plans reproduced during the half-decades 1908–12 and 1913–17 have approximate populations of 11,000 and 15,000, respectively; and that both the median communities representing the plans for schools in communities of 10,000 and less for the two half-decades have populations of between 3,000 and 4,000, while the median communities representing the plans for schools in communities of over 10,000 have populations between 50,000 and 60,000. The approximate equality of each of these pairs of medians argues for the similarity of the pairs of groups they represent and therefore, to some extent, for the validity of the conclusions drawn as to comparative tendencies.

THE KINDS OF SPACE-PROVISION

The wide range of kinds of space-provision.—The first fact by which one is likely to be struck in glancing down the classifications in the left-hand column of Table I is the wide range of kinds of space-provision. This table, which reports the frequency of appearance of all the space-provisions found at least three times in the 126 floor-plans examined, lists 50 kinds. If to these are added those 47 appearing only once or twice in the floor-plans, of most of which mention is made in succeeding sections of this article, this number is increased to almost 100. And if to this total are added the many kinds of space-provision not reported upon in this study, but including those for boilers, fuel, ashes, fans, engines, flues, vestibules, corridors, light-courts, etc., the final total would mount up easily to 125 different sorts.

Class-, grade-, or schoolrooms.—All schools, of course, are provided with class-, grade-, or schoolrooms, as may be seen by reference to the first row of figures of Table I. The five kinds of rooms immediately following (classifications 2–6) are not nearly as univer-

sally provided. Of recitation, ungraded, open-air, kindergarten, and science rooms, only the kindergarten rooms are given recognition in any large proportion of cases, recitation rooms finding a place in only a ninth of the plans, open-air rooms in half this proportion, and the remaining two kinds of rooms in but three plans each. By comparing the percentages for the half-decades, we may conclude that most of these special rooms are on the increase, but not at all rapidly, while by comparing the percentages for the smaller and the larger communities we find that the latter much more frequently provide them than the former. The following rooms are assigned in one or two plans each: special study, agriculture, drill, demonstration, departmental, visual instruction, and oral deaf. It is not unlikely that in a few instances rooms for the purposes indicated by the special classifications here named are provided without special designation in the plans examined.

Manual-training and domestic-science rooms.—Classifications 7–15 of Table I and 1–2 of Table II present the facts as to space-provisions for manual training and domestic science. In addition to the kinds named, the following are provided in one or two floor-plans each: woodworking, bench, machine, mechanical-drawing, sloyd, finishing, tool, bath, living, fitting, and laundry rooms. The former table shows the numbers and percentages of plans in which each of several sorts of space-provision is made, and the latter the total numbers and percentages of floor-plans making *some* space-provision for these two lines of activity. From the latter we see that equal percentages—42.9—of all floor-plans recognize both lines of work, floor-plans in the larger communities providing space for them much more frequently than the smaller, although it is in the latter only that these space-provisions are increasing in frequency. The last fact may be in part explained by the practice in some larger cities of providing manual-training or domestic-science "centers" instead of providing space for these lines of work in all elementary-school buildings. It may be seen in Table I that while the undifferentiated "domestic-science room" is on the increase in the new buildings in smaller communities, it is actually decreasing in frequency in the larger communities. In the latter the proportion of differentiated "cooking-" and "sewing-" rooms seems to be increasing. The special provisions for dining-room, pantry, and bedroom, although not common, are more frequently found in the larger than in the smaller communities.

TABLE II

Numbers and Percentages of Floor-Plans of Elementary Schools in Which Certain Special Space-Provisions Have Been Made

Space-Provision For	Communities of 10,000 and Less						Communities of Over 10,000						All Communities					
	1908–12		1913–17		1908–17		1908–12		1913–17		1908–17		1908–12		1913–17		1908–17	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1. Manual training	5	*18.5*	7	*24.1*	12	*21.4*	19	*59.9*	23	*60.5*	42	*60.1*	24	*40.7*	30	*44.8*	54	*42.9*
2. Domestic science	5	*18.5*	8	*27.6*	13	*23.2*	19	*59.9*	22	*57.9*	41	*58.6*	24	*40.7*	30	*44.8*	54	*42.9*
3. Physical recreation or training	13	*48.1*	14	*48.3*	27	*48.2*	20	*62.5*	29	*76.3*	49	*70.0*	33	*56.0*	43	*64.2*	76	*60.4*
4. Medical or nurses' room	1	*3.7*	2	*6.9*	3	*5.4*	2	*6.3*	9	*23.7*	11	*15.7*	3	*5.1*	11	*16.4*	14	*11.1*
5. Lunchroom for pupils	2	*7.4*	4	*13.8*	6	*10.7*	4	*12.5*	2	*5.3*	6	*8.6*	6	*10.2*	6	*9.0*	12	*9.5*
6. Teachers' room or teachers' retiring-room	16	*51.9*	20	*69.0*	36	*64.3*	20	*62.5*	31	*81.6*	51	*72.9*	36	*61.0*	51	*76.1*	87	*69.1*
Total number in group	27	.....	29	.....	56	.....	32	.....	38	.....	70	.....	59	.....	67	.....	126	.....

Space-provisions for the arts.—These are so infrequently made that they did not find a place in the tables. Each of the following is named once in the 126 floor-plans: "museum and art," "art," "arts and crafts," "clay-modeling," and "music."

Library room.—Only 29.4 per cent of all floor-plans make provision for the library (I, 16). Nor are these rooms notably increasing in frequency. There is little or no difference with regard to this provision between the smaller and the larger communities.

Facilities for physical recreation and training and for health supervision.—The space-provisions for physical recreation and training and for health supervision are shown under classifications 17–24 in Table I and 3–4 in Table II. In addition, a roof playground, a running-track, and a folk-dancing room are reported once each, and girls' dressing-rooms and dental rooms twice in the 126 floor-plans examined. Table II (classification 3) shows that *some* provision is made for physical recreation or training in approximately three-fifths of all plans examined, and Table I (classifications 17, 18, 19, 30) that this means playrooms much more frequently than gymnasiums. In a few instances both a gymnasium and a girls' playroom are provided. Consonant with this is the fact that, while gymnasiums and girls' playrooms are both increasing in frequency, boys' playrooms are hardly holding their own. Although gymnasiums are more common in the larger than in the smaller communities, playrooms find a place with almost equal frequency in both groups. Shower-rooms are increasing in frequency, especially in the larger communities. Swimming-pools made their first appearance in the second half-decade and then only in the larger communities.

Medical and nurses' rooms, although rather uncommon, are being provided for with increasing frequency, especially in the larger communities (I, 23, 24; II, 4).

Locker-rooms and cloakrooms or wardrobes.—Almost all plans provide for cloakrooms or wardrobes (I, 28) while a relatively small proportion provide rooms for lockers either in common for boys and girls or segregated (classifications 25–27). Most of those plans which include rooms for lockers provide both cloakrooms and locker-rooms, the latter being facilities accompanying gymnasiums and manual-training or domestic-science rooms. It is very seldom that locker-rooms only (and no cloakrooms) are provided in plans for elementary-school buildings.

Auditoriums or assembly rooms.—These space-provisions find place in almost half the plans examined (I, 29, 30), are more common in the larger than in the smaller communities, but are more rapidly increasing in frequency in the latter. "Study-halls" are provided in two additional plans. We should not leave out of account here the fact that gymnasiums are frequently used as auditoriums and that those schools in which the former are provided cannot be said to be unequipped with the latter. The stage in the auditorium or assembly room is usually also included in the plans, while the dressing- or anterooms are provided in approximately two-thirds of the plans that provide for the stage.

Lunchrooms.—A total of but 12 of all the 126 plans make provision for lunchrooms for pupils (I, 33–35 and II, 5). Moreover, they seem not to be increasing in frequency, either in the smaller or in the larger communities. The common lunchroom is found more frequently than is the segregated type. Teachers' lunchrooms (I, 36) are occasionally provided in the elementary-school plans of the larger cities. A single plan includes a kitchen for the teachers' lunchroom.

Teachers' rooms and emergency or rest rooms.—Teachers' rooms (I, 37, 38; II, 6) are not only provided in a very large proportion of the plans examined, but they are also increasing in frequency in both the smaller and the larger communities. In a very few instances both "teachers' rooms" and "teachers' rest rooms" are assigned. Boys' rest rooms and girls' rooms are found in one or two plans. The "emergency room" or "emergency and rest room" is more often provided during the second than during the first half-decade, but almost solely in the larger communities.

Office-rooms.—Rooms for the principal's office (I, 40) are found in 70.7 per cent of all plans examined. They are somewhat more common in the larger than in the smaller communities. They are also increasing in frequency, as may be seen by a comparison of the percentages for the two half-decades, but more rapidly in the smaller than in the larger communities. Reception or waiting-rooms in connection with principals' offices (I, 41) are not a common space-provision in plans of elementary-school buildings, but they are being provided with increasing frequency, especially in the larger communities. Office-rooms for the assistant principal (I, 42) are infrequently provided.

Janitors' and storage-rooms.—Janitors' rooms (I, 43) are provided in 29.4 per cent of the 126 plans. There is little tendency to

provide them with greater frequency, and there is only slight difference in the percentages of the smaller and the larger communities which provide them. Bicycle rooms (I, 44) appear in a small proportion of plans. Supply- and storage-rooms (I, 45) are provided in fully half the plans, are not as common in the smaller as in the larger communities, but appear with increasing frequency in both. Book or textbook rooms (I, 46) are far from a common space-provision. A "utility room" was found once in the plans examined.

Board-rooms.—Board-rooms (I, 47) were reported for 5 of the plans examined. Superintendents', supervisors' and secretaries' offices were each found in one or two plans.

Toilet-rooms.—Boys' and girls' toilets (I, 48, 49) are found in 88.2 per cent of the 126 plans examined. A few of the remaining are no doubt providing satisfactory facilities in adjoining or separate structures, but it is clear that some—and these not a negligible proportion—must be neglecting to provide anything better than the insanitary and immoral outdoor privy. Almost a fifth of the plans —approximately twice as many in the larger as in the smaller communities—make provision also for teachers' toilets (I, 50).

Relative frequency of the kinds of space-provision.—Before leaving consideration of the particular space-provisions, it will be worth while to turn our attention to their relative frequency, which is not readily apparent in Table I. In order to emphasize relative frequency, the space-provisions have been grouped according as they fall in decreasing percentage classifications and ranked in the order of decreasing frequency in all the 126 elementary-school floor-plans. The results of such arrangement and ranking are shown in Table III. As there are many kinds of space-provision appearing with identical percentages of frequency, the total num-

TABLE III

SPACE-PROVISIONS IN THE FLOOR-PLANS OF ELEMENTARY-SCHOOL BUILDINGS IN THE ORDER OF FREQUENCY OF APPEARANCE

90–100 per cent:

1. Class-, grade-, or schoolrooms, 100.0
2. Cloakrooms or wardrobes, 92.1

80–90 per cent:

3. Boys' toilets, 88.2
3. Girls' toilets, 88.2

70–80 per cent:

4. Principal's office, 70.7

60–70 per cent:
5. Teachers' room, 61.2
50–60 per cent:
6. Supply- or storage- room, 50.8
40–50 per cent:
7. Girls' playroom, 47.7
8. Auditorium or assembly room, 46.0
9. Boys' playroom, 41.3
9. Manual-training room, 41.3
30–40 per cent:
10. Stage in auditorium, 39.7
11. Domestic-science room, 34.9
20–30 per cent:
12. Library, 29.4
12. Janitor's room, 29.4
13. Kindergarten room, 26.2
13. Dressing- or anterooms to stage, 26.2
10–20 per cent:
14. Teachers' toilet, 19.1
15. Reception or waiting-room (to principal's office), 18.3
16. Gymnasium, 16.7
17. Shower-rooms, 14.3
18. Recitation rooms, 11.1
18. Cooking-room, 11.1
19. Girls' locker-room, 10.3
19. Teachers' rest or retiring-room, 10.3
5–10 per cent:
20. Dining-room, 9.5
21. Boys' locker-room, 8.7
21. Sewing-room, 8.7
22. Medical room, 7.2
22. Locker-room, 7.2
23. Lunchroom, 6.4
23. Bicycle room, 6.4
24. Open-air room, 5.6
24. Stock- or lumber-room (for manual training), 5.6
24. Emergency or rest room, 5.6
2.4–5 per cent:
25. Pantry (for domestic science), 4.8
25. Bedroom (for domestic science), 4.8
25. Nurses' room, 4.8
26. Board-room, 4.0
27. Boys' lunchroom, 3.2
27. Girls' lunchroom, 3.2
27. Teachers' lunchroom, 3.2
27. Book or textbook room, 3.2
28. Ungraded room, 2.4

28. Science laboratory, 2.4
28. Supply-room (for domestic science), 2.4
28. Swimming-pool, 2.4
28. Boys' dressing-room, 2.4
28. Gymnasium and auditorium (combined), 2.4
28. Assistant or vice-principal's office, 2.4

ber of ranks is only slightly more than half the number of kinds listed in Table I. Examination of the upper portion of Table III indicates that 7 of all the 50 sorts of space-provisions are made in more than 50 per cent of the floor-plans. In other words, in practice a majority at least of the groups of officials which have authorized the construction of the 126 elementary-school buildings whose plans were examined for this study regard the following as "minimum essentials" of such buildings: class- or graderooms, cloakrooms or wardrobes, a principal's office, a teachers' room, a supply- or storage-room, and boys' and girls' toilets. By referring to Table II we may see that to this list should be added some space-provision for physical recreation or training. Further reference to Tables I and II will show that, if only plans in cities over 10,000 population are considered, to this list of minimum essentials may be added space-provisions for manual training, domestic science, and an auditorium or assembly room, and that if only plans in the smaller communities are given consideration, from it must be subtracted the supply- or storage-room. The reader will find it interesting to note the very wide range of space-provisions not included in these minimum essentials. Indeed, he can hardly fail to be surprised at the low rankings and low percentages of recognition of some of the kinds of space-provision in the lower portions of Table III.

SIGNIFICANCE AND UTILITY OF THE FINDINGS

The tabulations made for the present study of the floor-plans of recently constructed elementary-school buildings show a wide variety of space-provisions: 50 different kinds of space-provision were found to appear three or more times in the 126 plans examined. If to these are added those which appeared but once or twice and others which for any reason were excluded from the tabulations, the total number will be found to exceed 100.

The first implication of such an array of kinds of space-provision likely to be drawn, viz., that all or most of the recently constructed elementary-school buildings are well adapted to meet the demands

of the best modern theory and practice, is subject to serious qualification. It appears that only 7 of all the sorts of space-provisions are made in a majority of these floor-plans. They are: class-, grade-, or schoolrooms, cloakrooms or wardrobes, a principal's office, a teachers' room, a supply- or storage-room, and boys' and girls' toilets. Although the larger communities tend to make additions to this list of what school authorities seem to regard as the minimum essentials of an elementary-school building, the space-provisions added in a majority of these communities are few. They are space-provisions for manual training, domestic science, and an auditorium or assembly room. It must be remembered that even in these communities large proportions of the plans do not include the additional provisions just named. The situation is, of course, more unsatisfactory in the smaller community.

Notwithstanding the fact that the figures for the second half-decade indicate that increasing proportions of the communities, both large and small, are extending their conceptions of what should be included in the floor-plans of an elementary-school building, it is discouraging to find the structures in which the educational process must be carried on lagging as far as they do behind the demands of the best modern theory and practice. This discouragement is made more poignant when it is brought to mind that the plans examined do not constitute a random sample of the plans of elementary-school buildings constructed in the country during the decade. They must be superior to such a random sample since they include those plans and buildings in which school officers or architects take sufficient pride to prompt them to submit those plans for reproduction and publication in an important educational periodical. There would in general be less desire to submit for such reproduction and publication the floor-plans of buildings more conservative as to kinds of space-provision than those used as the basis of this study. Thus, it may be stated with some assurance that the *typical* elementary-school building erected during the half-decade only recently closed still fails to give recognition to the need of providing shops, kitchens, and other rooms for training in the practical arts, to provide the facilities for physical training and recreation, to open up the opportunities of education and recreation of pupils and others in the community which are made possible through provision of an auditorium, not to mention a number of

other important aspects of modern education suggested by such a list of space-provisions as has been found in this study.

There has been some tendency in investigations in the educational world to accept the *typical* as the *standard*. While there is often merit in this procedure, we have in the findings of this study an illustration of the danger of following it blindly: to accept the typical elementary-school building of recent construction as the standard would be to hinder educational progress. Such a study, however, may have its value for school officers contemplating the erection of elementary-school buildings in that it provides a fairly complete catalogue of the many sorts of space-provisions now being made in elementary-school buildings. Because elementary education is the universal education and, therefore, should not deviate markedly below a high standard from community to community, careful examination of such a list should prove of considerable assistance. This type of use is enhanced by the fact that the study also discovers the tendencies, i.e., shows which space-provisions are increasing in frequency of appearance in the plans.

INTELLIGENCE TESTING AS AN AID TO SUPERVISION

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In the public schools of a democracy every child must have the opportunity to develop at a rate normal to his capacity. The normal rate of progress through the school course is probably determined more largely by the intellectual capacity of a student than by any other one factor. If his intelligence can be definitely ascertained, the first step will have been taken in the proper administration of the public schools.

The method of ascertaining the intellectual ability of a child should be simple, so that the capable teachers within a school system may be able to use it successfully. It must be brief, in order to make possible the testing of every child. It must be reliable, in order that the permanent record of the child will be a correct and accurate record of his intellectual capacity. The experience of Council Bluffs with the Stanford Revision of the Binet-Simon Intelligence Test would justify the assertion that it possesses these characteristics.

In October, 1917, fourteen teachers, one from each of the elementary schools in Council Bluffs, were selected by the principals because of their general intelligence and sane judgment. By courtesy of the Extension Department of the Iowa State University, it was possible to secure the services of Dr. Sylvester, who, in a period of two weeks, explained to this group of fourteen teachers the method of determining the intelligence quotients by the use of the Terman Scale. Children were tested by him in the presence of the group, and when a sufficient familiarity with the test had been secured, each one of the group tested children under his supervision. With this limited training, these fourteen teachers have tested 2,360 children in the kindergarten, first, second, and third grades of the Council Bluffs schools during the period from December, 1917, to February, 1919. The testing is done on Saturdays. Ten or twelve of these examiners can test eighty to one hundred children in one day. The data which follow will show, first,

whether teachers in the elementary schools can give the tests successfully; and secondly, the value of these records in supervision.

According to Terman, the various intelligence quotients have the following significance:

Intelligence Quotients	Classification
Above 140	Near genius
120–140	Very superior intelligence
110–120	Superior intelligence
90–110	Normal or average intelligence
80–90	Dulness
70–80	Border line of deficiency, sometimes classified as dulness
Below 70	Feeble-mindedness
	(50–70, morons—seven-to eleven-year intelligence)
	(20–50, imbeciles—three-to seven-year intelligence)
	(Below 20, idiots—three-year-old intelligence)

The general assumption is that the intelligence quotient remains constant. A child at five years of age with a high intelligence quotient will, in all probability, have great intellectual capacity all his life. Feeble-minded children never become normal adults.

TABLE I

SHOWING COMPARISON OF THE DISTRIBUTION OF INTELLIGENCE QUOTIENTS OF 2,360 PRIMARY CHILDREN WITH TERMAN'S SCALE

Intelligence Quotients	905 Unselected Children, 5 to 14 Years, Terman	2,360 Primary Children, Council Bluffs
	Per Cent	Per Cent
Below 65	0.3	1.8
66– 75	2.3	4.5
76– 85	8.6	10.3
86– 95	20.1	22.3
96–105	33.9	27.0
106–115	23.1	22.1
116–125	9.0	8.4
126–135	2.3	2.8
136–145	0.5	0.8

It is possible that a child with a quotient of 100 does better work than a child with a quotient of 110 because of moral characteristics. The intelligence quotient merely determines the child's mental ability. It does not ascertain the child's motive powers.

Table I shows the distribution of the intelligence quotients of the 905 unselected children tested under Terman's supervision and the distribution of the intelligence quotients of the 2,360 primary children tested by the Council Bluffs teachers. The only striking deviation in the Council Bluffs distribution is shown in the large number of children with quotients less than 75. This can partially be explained by the fact that there is a larger percentage of subnormal children in the first three grades of school than there is in an unselected group, and, secondly, it is probable that diffidence among smaller children might also account for part of the discrepancy.

TABLE II

SHOWING THE DISTRIBUTION OF INTELLIGENCE QUOTIENTS OF 2,360 PRIMARY CHILDREN OF COUNCIL BLUFFS PUBLIC SCHOOLS BY BUILDINGS

INTELLIGENCE QUOTIENTS	BUILDING NUMBER														TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Below 56	1	1	0	1	1	1	1	1	0	1	0	0	2	0	10
56– 65	5	0	5	5	6	2	1	0	0	6	0	0	3	0	33
66– 75	18	5	13	17	8	10	7	4	14	3	2	1	2	1	105
76– 85	28	20	20	38	20	28	17	13	13	18	16	2	8	2	243
86– 95	62	42	45	68	36	50	39	22	36	28	38	16	36	8	526
96–105	49	34	37	72	48	41	60	29	55	50	50	25	66	22	638
106–115	29	18	36	48	33	48	48	36	50	38	45	19	51	23	522
116–125	3	9	10	11	12	14	11	7	20	24	20	13	28	17	199
126–135	0	0	4	2	1	4	1	2	9	8	8	2	16	9	66
136–145	0	1	0	0	1	0	1	2	1	4	1	0	3	2	16
Above 145	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Total	195	130	170	262	166	198	186	116	198	182	180	78	215	84	2,360
Median	93	94	95	95	97	97	100	101	101	102	102	103	104	109	99

Table II, which gives the distribution of the intelligence quotients of 2,360 primary children of the Council Bluffs schools by buildings, shows how unfair it is to compare the work of one school with that of another without knowing the intellectual ability of the group of children tested. This table shows that in building No. 14 the median quotient is 16 greater than it is in building No. 1, and in buildings Nos. 12 and 13 the median quotient is approximately 10 greater than it is in buildings Nos. 2 or 3. The casual observer might suspect the difference in the intelligence of the children in these buildings from the general environment or from their personal

appearance, but these data give an accurate rating of their intellectual ability.

In order to ascertain the relation of the quality of school work with the intelligence quotients of children, an arbitrary standard for the distribution of the quality of school work has been followed in the grading of the children of the Council Bluffs schools. The highest 10 per cent in each class are ranked as honor students; the next 30 per cent are graded A or strong students; the next 30 per cent, B students, medium work; and the last 30 per cent are graded C, the poorest grade given. The 2,360 children whose quotients have been obtained are divided by Table III into three groups: those whose quotients fall below 85, those whose quotients range from 86 to 115, and those whose quotients are above 115. An examination of this table shows that only one-half of 1 per cent of students with quotients less than 85 were honor students, whereas 24 per cent of students with quotients of over 115 were honor students. It also shows that over 60 per cent of the students with quotients below 85 did poor work, whereas only 9 per cent of students with quotients over 116 did poor work. When it is recalled that this distribution does not take cognizance of the attendance of the child, the number of times the child has repeated the grade, or the age of the child, it is very apparent that there is a very high

TABLE III

SHOWING THE QUALITY OF SCHOOL WORK AND INTELLIGENCE QUOTIENTS OF 2,360 CHILDREN IN KINDERGARTEN AND PRIMARY GRADES OF COUNCIL BLUFFS FOR THE SEMESTER CLOSING FEBRUARY 7, 1919

Quality of School Work	Intelligence Quotients							
	56–85	Per Cent	86–115	Per Cent	116–145	Per Cent	Total	Per Cent
H.....	2	0.5	144	9	67	24	213	9
A.....	39	10.0	520	31	146	51	705	30
B.....	113	29.0	584	34	46	16	743	31
C.....	237	60.5	438	26	24	9	699	30
	391	100.0	1,686	100	283	100	2,360	100

Note.—H = Honor students, 10 per cent highest in class.
A = Strong students, 30 per cent of class.
B = Medium students, 30 per cent of class.
C = Poorest 30 per cent of class.

correlation between the quality of school work and intelligence quotient.

TABLE IV

SHOWING CLASSIFICATION BY HALF-GRADES AND QUALITY OF SCHOOL WORK OF ALL EIGHT-YEAR-OLD CHILDREN ATTENDING SCHOOL 60 OR MORE DAYS IN A SEMESTER OF 87 DAYS CLOSING FEBRUARY 7, 1919

Quality of School Work	Grades						
	I¹	I²	II¹	II²	III¹	III²	Total
46 STUDENTS—INTELLIGENCE QUOTIENTS BELOW 85							
H	.....	.....	1	1	.....	.....	2
A	1	3	1	.....	.....	.....	5
B	3	4	5	.....	.....	.....	12
C	5	7	7	4	4	.....	27
							46
51 STUDENTS—INTELLIGENCE QUOTIENTS ABOVE 115							
H	.....	1	.....	.....	7	4	12
A	.....	1	2	3	18	3	27
B	.....	.....	.....	1	7	1	9
C	.....	.....	.....	1	2	.....	3
							51

Note.—H = Honor students, 10 per cent highest in class.
A = Strong students, 30 per cent of class.
B = Medium students, 30 per cent of class.
C = Poorest 30 per cent of class.

In Table IV, all eight-year-old children having quotients lower than 85 or higher than 115 who attended school 60 or more days in a semester of 87 days closing February 7, 1919, have been classified by the grade in which they were found, the quality of work which they did, and their intelligence quotients. In other words, of all eight-year-old children in the Council Bluffs schools, 46 had quotients below 85, and 51 had quotients above 115. The 46 eight-year-old children with quotients below 85 are largely found in Grades I and II, nearly all of them doing medium or poor work. There are four of these students who reached Grade III, but all of

them are doing poor work. Of the 51 students whose quotients are above 115, only three did poor work. Nearly all of them were classified as honor or strong students. Most of them are in the third grade. If, then, nothing is known of an eight-year-old child attending the Council Bluffs schools except his intelligence quotient, it would be a safe statement to make that if his quotient were below 85 he would, in all probability, be found in the first or second grade doing poor work; if his quotient were over 115, he would very probably be found in the third grade doing strong or superior work.

TABLE V

SHOWING FAILURES FOR SEMESTER CLOSING FEBRUARY 7, 1919 OF 1,884 CHILDREN IN GRADES I, II, AND III

Intelligence Quotients	Number of Children	Number of Failures	Percentage of Failures
Above 115.....	215	7	3
86–115.....	1,336	172	13
Below 86.....	333	105	31
Total.....	1,884	284	15

A year ago an attempt was made to promote children from the kindergarten into the first grade on the basis of their intelligence quotients. If a child were normally well and had a mental age of six years, regardless of his physical age, he was given a trial in the first grade. In an attempt to check up the young children who were promoted into the first grade on the basis of their high quotients, an oral-reading test similar to the Gray Oral-Reading Test was given by the primary supervisor in January, 1919, to every child who had entered the first grade in September, 1918. There were 408 students tested. Of the 408, 128, or 31 per cent, were rated as superior readers in this test. Of these 408, 35 had been promoted to the first grade at five years of age because they had a quotient of 115 or over. Of the 35 students with a quotient of 115 or over, 22, or 63 per cent, were rated superior. If conclusions could be drawn from this one test, it would be safe to assume that children five years old with quotients of 115 or over would do the first-grade work better than the unselected six- and seven-year-old children.

Tables V and VI show the relation between the intelligence quotients of children and the failures. It will be noted that for the

semester closing January 25, 1918, of the 698 children in the first grade not a child with a quotient of 115 or over failed, whereas 31 per cent of those with quotients below 86 failed. For the semester closing February 7, 1919, of the 1,884 children in Grades I, II, and III whose intelligence quotients had been ascertained, 3 per cent with quotients of 115 or over failed and 31 per cent with quotients below 86 failed. When it is recalled that many of the students with quotients below 86 are repeaters, overaged, and retarded and that many times these students are promoted on the basis of time rather than of efficiency, it is probably safe to conclude that of children with quotients below 85, one-third cannot do a year's work in a year regardless of age or regardless of the number of times the grade is repeated and that practically all children in these grades with quotients of 115 or over can do the work.

TABLE VI

SHOWING FAILURES FOR SEMESTER CLOSING JANUARY 25, 1918 OF 698 CHILDREN IN GRADE I

Intelligence Quotients	Number of Children	Number of Failures	Percentage of Failures
Above 115.....	58	0	0
86–115.....	506	48	9
Below 86.....	134	42	31
Total.....	698	90	13

CONCLUSIONS

1. The Stanford Revision of the Binet-Simon Test can be given successfully by intelligent elementary teachers.

2. The intelligence quotient may be safely used in promoting children from the kindergarten to the first grade.

3. There is a high positive correlation between high intelligence quotients and strong school work.

4. There is a high positive correlation between low intelligence quotients and failures.

EMPIRICAL STUDY OF PUPIL-ABILITY IN PUBLIC-SCHOOL ART COURSES—PART I

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School of Education, University of Chicago

It is the purpose of this article to describe an investigation which was made to determine the relative extent to which ability to draw and ability to appreciate art quality are developed through present-day methods of instruction in the public school. The study involved the definition of the aims or objectives of art instruction and the organization of tests which can be used in determining the extent to which the objectives have been attained. Very little time will be given in this article to a discussion of aims. The following paragraphs outline briefly the modern conception of the most important results of art instruction in the public school.

ANALYSIS OF AIMS OR OBJECTIVES OF ART EDUCATION

Two significant and fundamental outcomes of art education are revealed by an analysis of the relation of this subject to the social and occupational life of the pupil. These are, first, ability to recognize and appreciate art quality, and secondly, ability to draw or describe things graphically.

Art instruction in the past has fallen short of its great educational possibilities because it has overemphasized training in technic and has failed to build up a type of art knowledge which is needed as an important part of a pupil's general education. If art instruction can develop on the part of every pupil true appreciation and knowledge of art quality in all things, it can become an active, essential, moral force in the lives of the people. Art in the public school can attain this objective when taught so as to equip every individual with practical drawing ability and a practical knowledge of the many applications of art to the problems of everyday life. Simple problems in design and construction involving study and arrangement of line, form, and color aid in the development of art judgment and appreciation. Instruction should be planned in the lower grades for this end and not to train all pupils to become members of the profession of designers.

Training in art which aims to develop great technical skill does not add greatly to the practical equipment of the average pupil for later life. Such technical training can be introduced in the elective art courses of the later grades in ample time to meet the needs of pupils possessing art talent and desiring to specialize in the subject of art. The proper end of art education in the elementary grades is training in general art knowledge and the practical application of this knowledge in such a way that it will serve the needs of all pupils and not simply the few. In the high school the art work may properly become special and aim to serve the needs of the few who desire to become specialists in art or who desire to continue art as an elective study for the added culture and appreciation thereby afforded.

A course of study in art which will be of practical value to all pupils in meeting the problems of art as related to everyday life may be summed up as follows: (1) efficient training in art knowledge and appreciation and practical problems in design and construction as aids to this end; (2) simple problems in drawing to develop practical graphic expression. This means training in ability to express ideas in a clear and definite manner through the medium of drawing. Good drawing is necessary for good design.

Art, through its use of color, design, pattern, and descriptive power, can be made a force touching everyday life at every hand. All people find it necessary to decide questions of shape, arrangement, and color. Few can create works of art, but all must use them. Household, civic, business, and personal affairs all require careful art considerations. We do not all require sufficient knowledge to design a building or monument, but all people need as a part of their general education practical knowledge of what is in good taste, refined, and according to recognized standards of art so that they may decide many questions involving principles of art related to the home, business, and industrial life. Those who lack a good workable art knowledge have no background for art judgment and make wrong decisions which result in economic waste. Evidence of this can be found in our streets, public monuments, buildings, store windows, clothing, and manufactured products. A country's industrial products are an index of its development in art. Modern manufactured products will improve in art quality just in the degree that public taste is developed by the teaching of our educational institutions.

TYPES OF TESTS REQUIRED TO MEASURE THE FUNDAMENTAL OUTCOMES OF ART INSTRUCTION

Following the classification of art abilities thus far defined we may devise a series of tests which will show how far the schools are successful in cultivating such abilities and the ages at which the various abilities seem to mature. Two distinct types of tests were devised and used: First, those that deal with *ability to appreciate art quality* (whether in a chair, rug, dress, painting, statue, or building). This may be thought of as a mental product of art training which is developed to aid pupils in making choices according to correct standards of art. Design, properly studied, aids greatly in developing this type of ability. Second, those which deal with *ability of graphic expression*. This means ability to represent graphically ideas and things of artistic quality. This is derived through the study of drawing, painting, design, modeling, construction, etc. As drawing is a fundamental type of representation it will serve as a satisfactory means of testing this ability. A pupil cannot produce skilful design until he can draw the thing that he wishes to use in his design; hence drawing and design are closely allied. Many schools have adopted the practice of eliminating a large amount of drawing from abstract material, cast drawing, and painting to develop pure technic, etc., and have more intimately co-ordinated the work of drawing and practical design, thereby saving considerable time and adding an element of interest and direct practicability to the work. However, the development of ability to draw still remains as a prerequisite to design and special art work of later years.

Test No. 1 was designed to measure the ability of pupils to select and make judgments involving art principles. The problems of this test offer a means of measuring the pupil's reaction towards art principles. They are similar in character to the problems encountered in the social and occupational demands of everyday life. Test No. 2 was designed to measure the accomplishment of pupils in drawing ability.[1]

DESCRIPTION OF TEST NO. 1—APPRECIATION TEST

A series of fourteen problems in simple selection or discrimination were prepared as illustrated by plates I, II, III, and IV. They

[1] These tests, somewhat revised, in printed form with problem 8 in color, rating scale, and detailed instructions for giving and scoring of results will be made available for distribution by the Prang Company Chicago.

ART APPRECIATION TEST

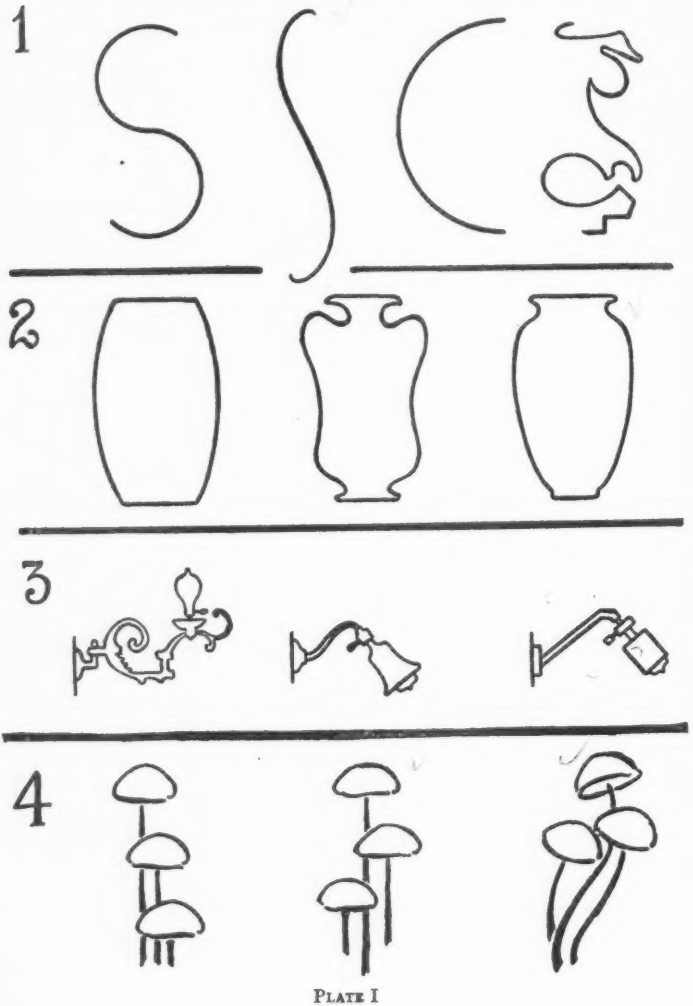


PLATE I

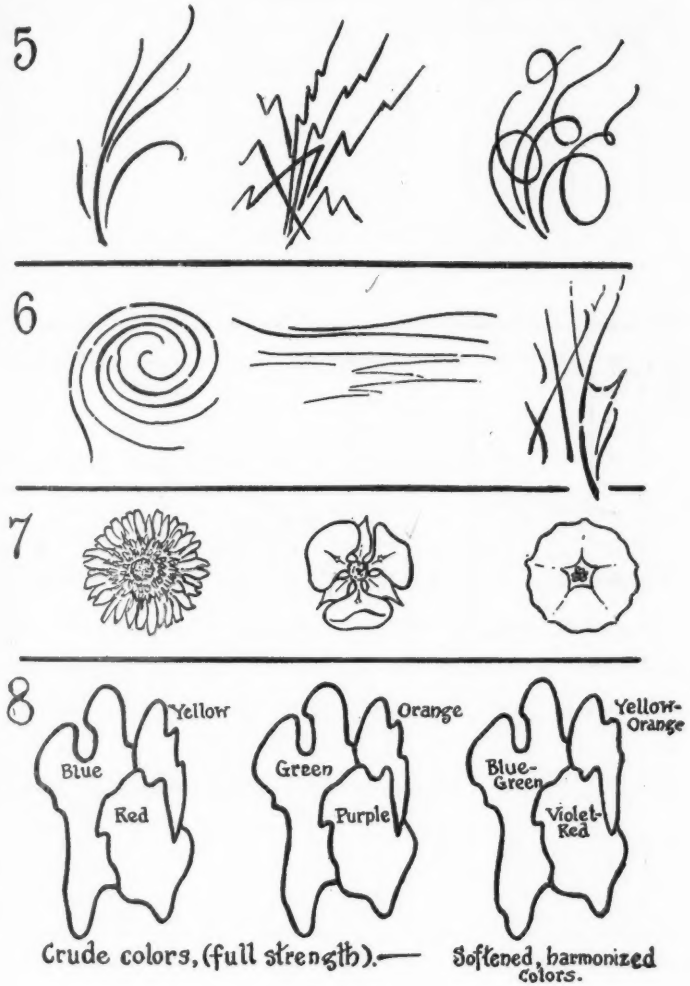
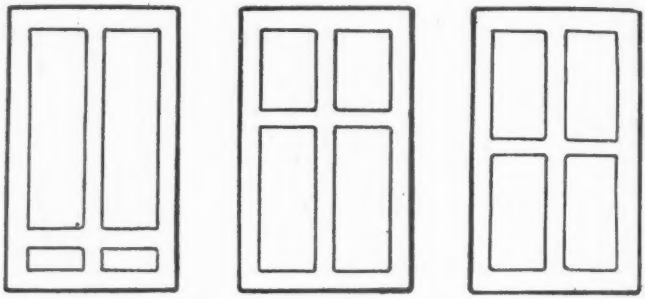

5
6
7
8
Yellow
Blue
Red
Orange
Green
Purple
Yellow-Orange
Blue-Green
Violet-Red
Crude colors, (full strength).—
Softened, harmonized colors.

PLATE II

9



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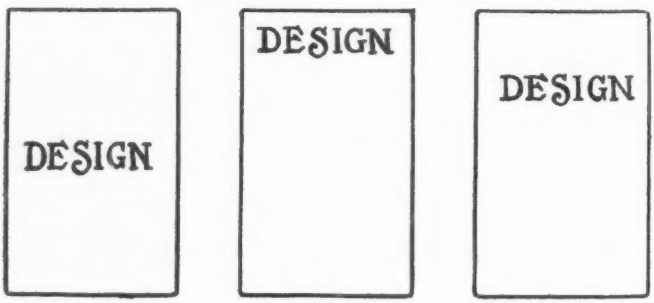
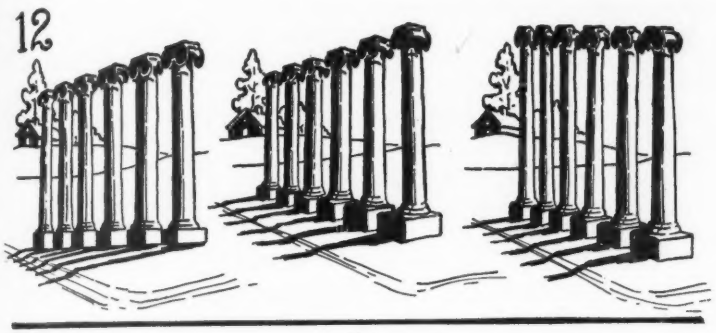


PLATE III



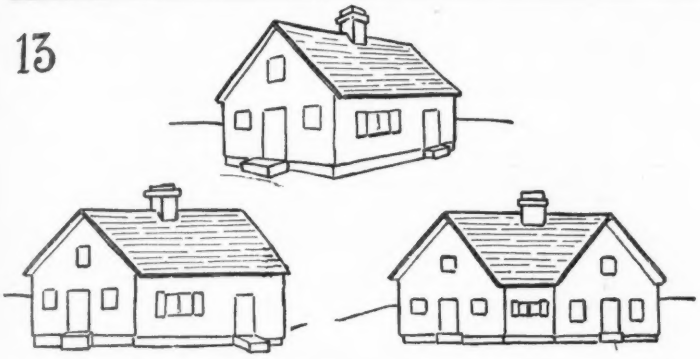


PLATE IV

offer a means of testing ability to discriminate between superior and inferior art considerations. Each section of the test is so arranged that the pupil can record his judgment by making a choice between three or four figures. There is only one correct choice possible so that the scoring of results is very definite. The collection of figures is so made up that choice is not too easy. It would be possible to make the contrast so gross as to compel the pupil to make the right choice, but this exaggeration of differences has been carefully avoided. There are fourteen definite problem-solving reactions in Test No. 1 as follows:

TEST NO. 1. ABILITY TO APPRECIATE (MENTAL)

I. Refinement of curves [line-abstract]. Choice between pleasing, graceful, quality in curves and mechanical, uninteresting types.

II. Refinement of line and form [contour]. Choice between refined, graceful form and crude, uninteresting, and exaggerated form.

III. Appropriateness in utility [line and form]. Choice of most appropriate and pleasing quality for a particular purpose.

IV. Arrangement [line and form; rhythm]. Choice between stiff, equal, geometric spacing and arrangement and variety, order, and harmony of arrangement.

V. Rhythm and grace [harmony of line]. Choice between rhythm, grace, and harmony of line groups and groups lacking this quality.

VI. Expression in line [rest or action]. Contrast between expression of quiet, calm, or repose in line groups and vigor, action, and unrest.

VII. Decorative possibilities for design. Choice between extreme simplicity and complexity in selecting plant forms for design motifs.

VIII. Color sense [color harmony]. Choice between softened, related colors and crude, unrelated colors.

IX. Spacing and proportion [variety and interest]. Choice between proper variety and interest in space breaking and equal, uninteresting, or exaggerated proportions.

X. Pictorial or decorative composition [order and arrangement]. Choice between proper order and arrangement and crowded or equally spaced, monotonous composition.

XI. Spacing [point of greatest interest]. Contrast between correct and improper space relation.

XII. Perspective [vanishing point]. To test knowledge of laws of perspective.

XIII. Perspective [foreshortening]. To test knowledge of laws of perspective.

XIV. Appropriateness [accent and characteristics of line]. Choice of correct use of pattern for a particular purpose.

These tests were prepared in quantities, a separate copy being given to each member of a class. This prevents pupils from influencing each other in their judgments, which often happens in

group tests. Names were written on the sheets and the pupils were required to sit at attention while each problem was explained by the instructor, then all indicated their choice by checking it on signal from the instructor.

This test requires less than fifteen minutes and was conducted with no more comment than was necessary to indicate what the choice was to be in each problem. Brief instructions were found to be more successful in explaining the tests than elaborate discussions of principles involved in the choices. Care must be taken that the person giving the tests does not make explanations that will influence the pupils' decisions; hence the following uniform instructions were given in all grades:

1. Study the curves at the top of the page. Decide which curve is most graceful. Mark it.
2. Decide which vase form is most pleasing, etc.
3. Decide which electric light bracket has most appropriate use of lines.
4. Which group of lines and spots has most pleasing arrangement?
5. Which group of lines has the most rhythm and grace?
6. Decide which group of lines is most suggestive of quiet, calm, or repose.
7. Mark the flower form that has most possibilities for a design motif.
8. Mark the color group that is most pleasing.
9. Which arrangement of door paneling is most interesting?
10. Which pictorial arrangement is most pleasing?
11. Mark the book cover that has the best placing of title.
12. Mark the drawing of Greek columns that shows best perspective.
13. Mark the drawing of the house that shows best foreshortening of lines.
14. Decide which dress pattern would be most appropriate for a very stout, short girl.

DESCRIPTION OF TEST NO. 2—DRAWING TEST

This test is similar to the usual examination in elementary freehand drawing. It was designed to test ability to draw from specification, to copy, to draw curved lines, to draw from memory, and to draw from simple objects involving foreshortening and perspective. A period of thirty minutes was allowed for this test in all schools to obtain a uniform comparison for fairly rapid drawing. Only one sheet of paper was allowed each pupil and all the drawings had to be made on one side. This was done to simplify the problem of scoring.

TEST NO. 2. ABILITY TO DRAW (REPRESENTATION)

I. To test proportion drawn from specification.

1. Draw freehand a small-scale rectangle in the proportion of 5×12.
2. Draw freehand a small-scale triangle in the proportion of 4×4×2.

II. To test proportion in representing a given figure [copy].
  3. Make a small-scale drawing of the map on board [United States].
III. To test drawing of curved lines.
  4. Copy the curved lines drawn on the board. [Here the instructor drew on the board three groups of well-selected curves.] This enables the pupil to see how they are drawn. See Fig. 1.
IV. To test representation [from memory and from objects].
  5. Draw from memory a horse [side view].
  6. Make a sketch of the chalk box [on desk].
  7. Make a sketch of the waste basket [on chair].

It is evident that these two types of tests do not measure all phases of art ability. For example, they do not measure the various types of technic—pencil, pen, and brush; the handling of different art mediums as oil, water-color, charcoal, etc.; or the many kinds of construction and industrial work practiced in the schools.

FIG. 1.

The chief aim of this investigation has been to study results of instruction in the basic elements of practical art ability for the mass of pupils and not for the relatively small per cent of special talented pupils. It is believed, however, that the tests are sufficiently inclusive to cover the subject-matter and aims of art instruction during the formative and most important period of the pupil's school life.

With the limitations mentioned above, the tests offer a means of determining the relation, or lack of relation, between the two chief objectives of the art course, and may be used to advantage in checking up subject-matter and in determining wherein the school course needs reorganization, and in determining whether or not significant phases of instruction have been neglected and need additional emphasis.

METHOD OF GRADING WORK

In scoring the appreciation test one-fourteenth was counted off for each incorrect choice. Each of the fourteen problems was given equal value in order to determine relative difficulty of various phases of subject-matter represented by the tests.

In scoring the drawing test a rating scale was used. The scale was prepared by selecting from all the drawings secured in the various schools ten different standards of attainment for each problem of the test. These standards were carefully chosen so as to represent as nearly as possible ten different steps of attainment in drawing. They represent actual results from Test No. 2 compiled from the various schools from the poorest work in Grade I to the best work in Grade VIII and constitute a rating scale of ten divisions ranging in value from 0 to 100. Each step in the scale represents ten points of superiority or inferiority over the one preceding depending on whether one reads from best to poorest or vice versa. See plates V, VI, and VII.

Thirty persons, including supervisors of art, public-school, normal-school, and college art instructors, aided in the preparation of the scale. It represents as accurate a scale as can be prepared without exhaustive research and complicated mathematical computations. A highly standardized scale is difficult to obtain even by this method because of so wide a variability in individuals' judgment respecting each item to be measured. This was pointed out by Edward L. Thorndike in his research in measuring achievement in drawing.[1]

The following method was employed in scoring the drawings from Test No. 2. The scale was placed upon a large table and all the drawings from each school were compared to it and placed in appropriate groups. The drawings for each grade were scored and tabulated separately. As the ten divisions of the scale are clear and distinct, representing approximately equal steps of difference from the poorest drawings to the best, very few teachers of experience will encounter difficulty in scoring the drawings through the use of the scale. It was found that five groups from the poorest to the best covered the variability for each grade with very few exceptions.

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[1] EDWARD L. THORNDIKE, "Measurement of Achievement in Drawing," *Teachers College Record*. November, 1913.

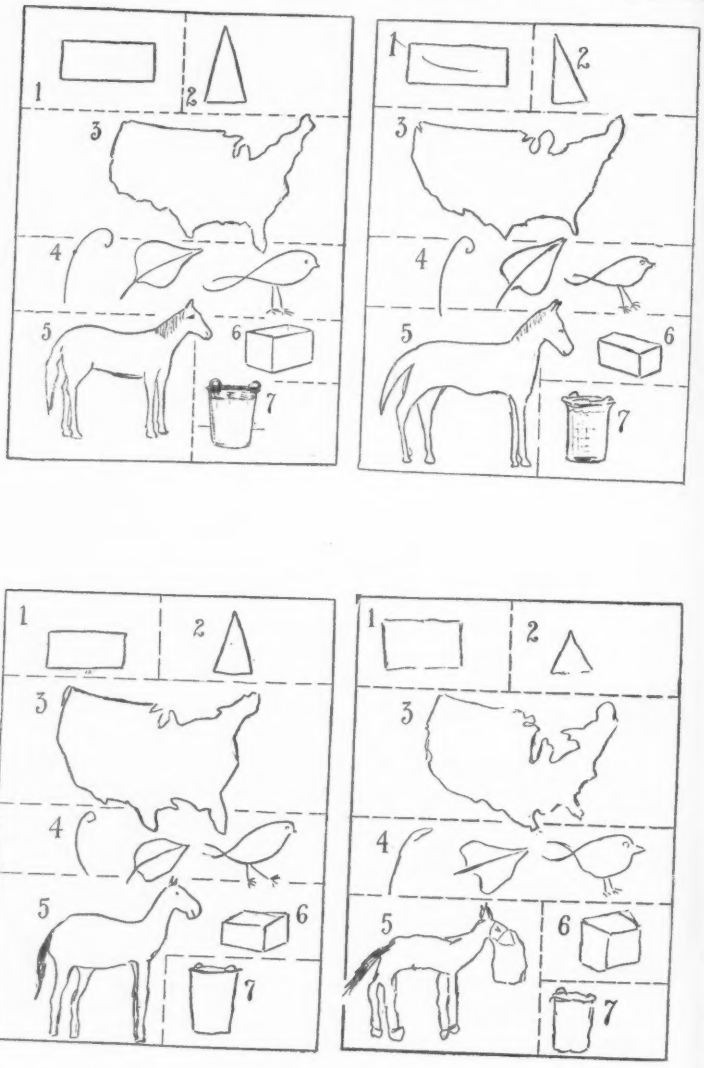
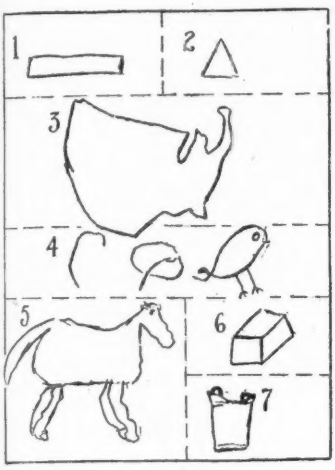
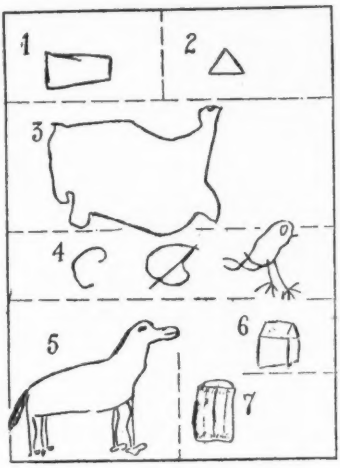
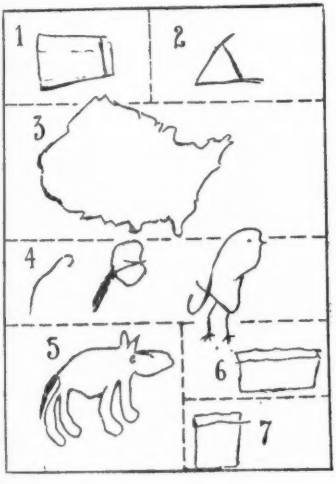


PLATE V







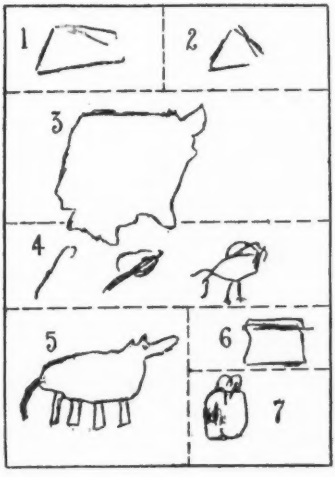


PLATE VI

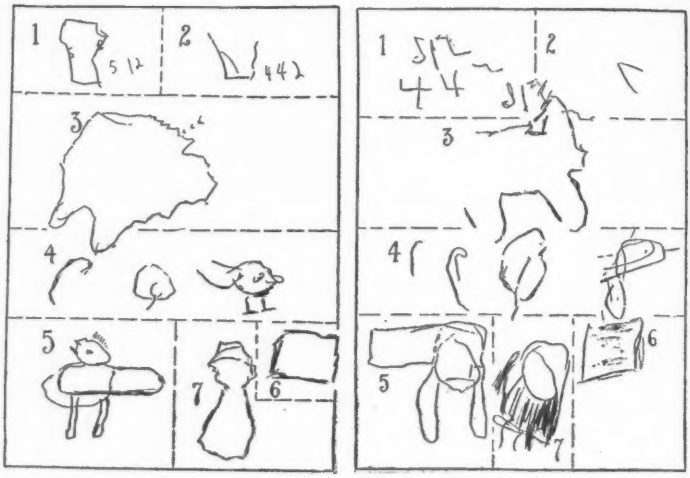


PLATE VII

TAXATION, TEACHERS' SALARIES, AND COST OF EDUCATION

H. C. MORRISON
School of Education, University of Chicago

There are signs, and not a few, that the cost of education is reaching the breaking point. There has probably been no period in our educational history in which there has been so much unrest within the public-school system as there is at the present time. Of course, much of the unrest is only part of the general reaction from the war period which is felt by the whole world. Some of it is directly traceable to war conditions—notably trials of teachers for alleged seditious utterances in the schoolroom, and the influence of war costs in living. But, on the whole, unsettled conditions were due anyway, and the war only served to put an extra strain upon a situation which was already under severe stress. By far the largest elements in the present situation seem to be two: first, the agitation and active organization centering around the salary question; and, secondly, the inclination of city councils and other branches of municipal government to endeavor to secure control of city school systems. While there is apparent not a little political self-seeking in both these phases of disturbance, both are on the whole, as I shall try to show, based upon an impossible economic situation, and both are at bottom abundantly justified.

The salary question is not a new one. For many years, as we all know, it has been to the fore in most associations of teachers. Everybody who is likely to read this article is so familiar with the whole question that it would be superfluous to remark here upon the need and significance of a much better-paid teaching force.

The other element is far from being so clear to most school people. We are, as a class, little inclined to look with tolerance upon the problems of city governments and are perhaps not fully aware of the situation in which many city governments are placed. It is becoming increasingly difficult to finance municipal operations. For a long period of years the municipality has been financially our shakiest governmental unit. The cities have been running in

debt for ordinary expenses and outlay to such an extent that the per capita indebtedness of 146 cities of over 30,000 population increased in the period 1903–17 from $44.71 to $80.75. From 1903 to 1915, the net indebtedness of these cities increased 140.7 per cent, while their populations increased 38.2 per cent, and the national indebtedness, 17.9 per cent.[1]

Now the municipal expenditure for schools is frequently in excess of one-third of the whole municipal expenditure, and the school department is often the one department over which the city government has no control. In spite of the fact that quarrels between city governments and boards of education are often the opportunity for the local politician to add the teaching force to his machine, still, at bottom, the city authorities have a very real grievance. They are responsible for efficient public service outside the school department, and they often behold that department securing all it can, leaving to them an inadequate residue of the municipal revenue.

OUR SYSTEM OF SUPPORT IS ANTIQUATED

The root of the matter seems to be that our system of revenue for schools is out of date and can produce neither sufficient money for teachers' salaries, nor sufficient income for public schools and other necessary municipal expenses.

Municipal revenue is derived chiefly from taxes on property, and the amount of taxation which property can stand is a strictly limited matter. In 1917, the cities of the United States having a population of 30,000 or over collected 71.7 per cent of their aggregate revenue from property taxes, the variation running from 51.5 per cent in Mobile, Alabama to 92.6 per cent in New Rochelle, New York.[2] The remaining sources of municipal income are licenses; fines, forfeits, and escheats; subventions; grants; gifts; earnings of municipal departments; highway privileges; rents; etc. In smaller municipalities, the receipts from other than property taxes are of course less and less as we descend the population scale. With the disappearance of the liquor traffic, a particularly important source of municipal revenue will disappear.

Turning now to the sources of school revenue, we find that 77.5 per cent is derived from local taxation, 15.45 per cent from state

[1] *Financial Statistics of Cities*, Bureau of the Census, 1917.
[2] *Specified Sources of Municipal Revenue*, Bureau of the Census, 1917.

taxation, and 2.9 per cent from permanent funds and rents. The amount derived from state taxes largely originates in property taxation, so that it is probably a moderate estimate to conclude that 65 per cent or more of the whole support of the schools originates in property taxation, and that of the remainder all but about 3 per cent comes for the most part from taxes of some kind laid upon business or ultimately upon property.

Now, our whole system of property taxation harks back to a time when property was almost the only expression of tax-paying ability. In the early days of the republic, corporations had not come into existence to any considerable extent, income from industrial earnings was small, salaries were of small consequence, inheritances were transmitted in the form of real estate and personality, which seldom included such items as stocks and bonds. If you were going to tax a man for the support of the government, you had to lay a tax upon his property, for that was all there was to tax. The assessors' lists often still contain items, the very names of which are no longer in common usage.

It is no doubt true that wealth is still expressed in terms of property of some sort, but tax-paying ability is not. With the evolution of industrial society, income has come to be the best single expression of tax-paying ability. Not only is the incidence of the bulk of our state and local taxation upon property essentially unjust and undemocratic, but it is also an utterly inadequate basis for state and municipal revenue. As long as education is supported in the main by local taxation and local taxation is mainly laid upon property, we not only cannot place our salaries on a respectable footing, but we also cannot maintain the school enterprises which we already have—unless the municipality is going to curtail other strictly municipal enterprises, such as streets, police and fire department protection, local sanitation, local welfare and charity works. Cities cannot go in debt forever. Many a country town has already been brought to the point at which you could not afford to take the gift of the whole township in fee simply if you had to maintain its local responsibilities. It is a serious question whether or not the city is to pass through the same cycle.

If this were an article on taxation, I might go on and point out the extreme difficulty of assessing taxes against property, the demoralization incident to estimating assessments, the injustice of

property taxation, the fallacies connected with the assumed rent and tax relation, the fatal burden laid upon rural as against city property, and so on, but space will not permit.

LIMIT OF INCOME FROM PROPERTY TAXATION

There is a limit to income from any form of taxation. The government holds no fairy's wand by which revenue can be created in unlimited quantities. But income from property taxation has already reached its limit in all but a few highly favored residential communities.

Aside from inconsiderable sentimental values, property is valuable only because of its actual or potential rent-paying capacity. If the government destroys its rent value by taxation, property tends to go out of existence. If your residence is taxed so much that the taxes added to the interest on the money invested, insurance, and depreciation make the rent unduly high, you sell out and either hire a house or go somewhere else. Perhaps you are forced to let the property run down. If you are renting property and find yourself in a falling market for rents together with high taxes—a coincidence which is very likely to occur—you either dispose of your property at a loss or allow it to deteriorate. If your flocks and herds are unduly taxed, you turn them into meat. If your standing timber is taxed too high, you cut it down and market it. If you are in business, you either secure tax exemption or an utterly unfair assessment—one of the two principal sources of municipal corruption, by the way—or else you shut down, scrap the plant, and look for a more favorable location.

So it comes to pass that in most communities a working balance is soon found, and taxes are laid as high as property will stand. What is this rate? It ranges practically between about 10 and 16 or 18 mills on a full value assessment, whatever that may mean. Is there any guiding principle here? I think there is. When the basal rate of interest is about 4 or 5 per cent, and the net rental income from property exclusive of taxes is, let us say, 6 or 7 per cent, the local true rate may approximate 20 mills; but there will be trouble in that town. It cannot go over about 20 mills and stay there. It will ordinarily be much less. In other words, the local true tax rate in the long run will be such that it will not exceed the difference between the basal value of money and the prevailing net value of rent.

LIMIT OF SCHOOL REVENUE

How much, then, can we expect for school revenue?

The Bureau of Education reports that the school levy for the United States is 28.67 per cent of the total levy. The median for 48 states is 30.33 per cent, and the most common group of percentages is that falling between 30 and 40 per cent of the total levy. Roughly speaking, about one-third of the total levy usually goes to schools, or from about 3 mills to not exceeding 6 mills; and that in the long run is all we can depend upon. We ought as school people further to realize that we must be "hard-headed" about this matter and to see clearly that people may be, and frequently are, so devoted to the cause of education that they may ruin themselves by what they raise for schools, and in the long run ruin the schools as well. On our traditional basis of taxation teachers' salaries will never be materially higher than they are now, and further, we have on that basis reached the limit of educational expansion.

HOW SHALL WE DISTRIBUTE TAXATION?

In the new era of federal, state, and municipal expenditures upon which we have entered, we shall undoubtedly be obliged to embark upon most major enterprises only in so far as they are themselves productive of tax-paying wealth, and we probably ought to derive the support of each such enterprise from the kind of tax-paying power which it creates. For instance: Street construction and maintenance in cities is always a legitimate charge upon property for it brings into existence tax-paying property which is ordinarily more than sufficient to pay the cost. Similarly, fire departments reduce insurance rates on property, and expenditures for state highways create an ample appropriate revenue. Health departments, however, have their economic outcome, so far as tax-paying is concerned, in increased incomes. We have always contended that education increases income, or at least its foundation in productivity, and we are demonstrably right. It would be hard to show that on the whole education tends to increase the amount of tax-paying property. It is hard to trace any direct tax-paying relation between the work of police departments, military activities, and similar protective agencies, which, after all, exist very largely because other governmental agencies fail.

INCOME TAXATION THE NATURAL SUPPORT OF EDUCATION

Accordingly, it seems clear that in the future we should draw support for education from taxes on incomes, including the smallest incomes from which it is practicable to make collections. Not only are incomes the natural economic product of education, but in incomes and their correlated source, inheritances, there must always be an ample source of educational support as long as education is economically efficient. It is of course true that incomes must for many years to come be heavily taxed by the federal government to pay the war indebtedness, but to a very large extent the cost of financing of war indebtedness will be offset by interest payments made by the government to the same people who pay the federal income taxes.

PROBABLE FUTURE COST OF EDUCATION

The aggregate amount of money expended for education in the United States is ridiculously small, but it is inadequate, not because of any niggardliness of our people in the direction of education, but because of obsolete methods of taxation. The total revenue for public-school current expenditures appears to have been $633,900,833 and the total current expenditures $640,717,053.[1] When we compare this expenditure with a total of about $2,750,000,000 for clothing, or well over $1,000,000,000 for tobacco, liquor, and confectioneries[2] we can have a little prima facie doubt of the ability and the willingness of the American people to support education.

SALARIES

The salary account ought to be well in excess of 70 per cent of the whole current expenditure, judging from good existing practice. On an adequate scale of salaries, the ratio will run up to 85 per cent or over. What then is an adequate salary scale?

The answer is a difficult one and different people will doubtless arrive at their own conclusions in their own way. In the long run, salaries like everything else will adjust themselves according to some natural law. At present, the natural adjustment is simply giving us a woefully deteriorated teaching force.

I suggest that the point of departure will have to be a minimum salary sufficient to maintain a well-educated and well-trained

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[1] *Report of United States Commission*, 1917, pp. 78 and 81.

[2] *Thirteenth Census.*

woman in dignity and comfort with provision for comfortable retirement. On the scale of prices likely to exist in the future, so far as we can see, such a minimum salary will average for the United States not far from $1,200, for ordinary teaching positions. Similarly the average maximum for such positions will likely be about $1,800, with an average of about $1,500. This is written in full view of the following considerations:

1. That economic conditions will not be uniform in different parts of the country;

2. That there must always be an outlet for superior merit into salary classifications materially higher than the average maximum.

If men are desired in the teaching service, first-class men with families will inevitably in the long run command higher salaries than first-class women—otherwise, they won't teach. Judging from college experience, the average salary for men teachers will not be far from $2,500, operating under the same conditions as salaries for women.

If the foregoing reasoning is sound, we must expect a salary account, on the basis of existing teaching positions as shown by the United States Commissioner's record, of about $1,000,000,000 annually, or a total current expenditure of approximately $1,250,000,000 annually. The expenditure for salaries shown by the report for 1917 is $345,000,000, which has of course been materially increased by salary increments under the stress of war conditions.

EXPANSION AND CONTRACTION OF EDUCATIONAL ENTERPRISES

Lack of space forbids the discussion of two elements in the economics of education which materially affect our final conclusions. Few school people will admit that we have as yet reached the boundaries of needful educational activity—the whole question of physical education for instance, and the further question of vocational education. However, we are bound to consider whether or not educational activity is unduly expanded in some directions. A candid study of the situation would probably disclose the fact that our program is wastefully prolonged in years, and the further fact that there is an immense amount of wasteful overlapping carried on by private enterprises which seek public support, though not always through taxation.

CAN THE NATION AS A WHOLE CARRY AN ADEQUATE EDUCATIONAL PROGRAM?

Supposing that we were, as a people, to base the support of schools on income taxes and release the $500,000,000 or more which we now lay upon property, what would be the effect?

In the first place, the step would do more than anything else possibly could to put our municipalities in the way of salvation, political as well as economic.

But, then, could the nation carry the load? For the fiscal year ending June 30, 1918, the individual, partnership, and corporation income and excess profits taxes collected by the federal government amounted to $2,838,999,894.[1] That was before the government really began to lay war taxes.

There is, of course, a limit to income taxation, but it is not at all the kind of limit which exists in the case of property taxation. So far as the support of education is concerned, we are not likely ever to run in danger of exceeding the limit of the amount of the social income creditable to education for the reason that enhanced educational efficiency, bearing upon the masses of the population, is likely always to create income faster than it uses it.

THE FINANCIAL BASIS OF DEMOCRACY IN EDUCATION

Democracy is an extremely real ideal in the minds of all of us, but it is not invariably in the form of a set of clear-cut notions. We shall agree, perhaps, that the principle at the basis of Americanism is "Equality of Opportunity." We have never seriously promised more than that in the direction of equality, nor could we. But we have thought a good deal of the belief that here in America every man can at least realize upon his native endowment, make of himself whatever there is in him to make. We don't believe that our institutions can last except on that basis. And yet for about a hundred years the very foundation of equality of opportunity has been disappearing. Every student of educational administration from the state end knows that within the several states there are enormous differences in the quality of local school systems due to differences in the wealth of local communities and their consequent relative ability to support schools. It is not uncommon to find communities within states differing in the proportion of 20 to 1, or even more, in this respect. Nor are rural communities always

[1] *Report of Commissioner of Internal Revenue.*

poor and city communities always rich. The ability of a municipality to support schools is measured, not by its gross wealth, but by the ratio of its tax basis to the average attendance in its schools.

Similarly, great inequalities exist among the states. I selected the following states at random and computed the ratio of their true taxable wealth as found by the census bureau to their average attendance as reported by the United States Commissioner of Education, with the following results:

RATIO OF TRUE TAXABLE WEALTH TO AVERAGE ATTENDANCE

State	Taxable Wealth	Average Attendance	Taxable Wealth Divided by Average Attendance
Maine	$ 1,030,266,547	114,865	9,057
Massachusetts	5,735,230,115	506,910	11,116
New York	21,912,629,507	1,288,047	17,012
Michigan	5,169,022,582	532,362	9,709
Iowa	7,437,094,834	391,132	19,014
Maryland	12,002,216,720	167,931	11,923
North Carolina	1,745,233,696	410,140	4,256
Alabama	2,050,014,767	292,864	7,000
Kentucky	2,152,097,565	308,277	6,981
California	8,023,435,581	393,088	20,411

The figures speak for themselves. With the best possible will in the world, a child born in North Carolina has only about a fifth as good a chance for an education as a child born in California. Or, to put it another way, if North Carolina maintains equally good schools with California for the education of citizens of the United States, she must tax herself nearly five times as heavily. Consequently, if our democracy is anything more sincere than a political catchword, the state is bound to equalize school privileges within its boundaries, and the United States is similarly bound to equalize the burden of making American citizens as between the states.

Several states have doubled and twisted in their efforts to equalize school taxes laid on property by other taxes, for the most part laid on property. Not only does the state fail, and must always fail, to secure in that way an adequate revenue for the support of education, but any effective scheme of equalization of that sort requires the genius of an army of expert mathematicians, not only for devising, but also for operating.

If we select an income basis instead of a property basis, the inequalities will be still greater. The only possible way out, both for adequate support and equality of educational opportunity, is for the state to bear the whole current cost of operating schools and to derive its revenue for school purposes from incomes, inheritances, and similar objects, but chiefly the first; and further for the federal government to devote a large proportion of its own revenue from incomes to the equalization of revenues for school purposes as between the states.

TRAINING PUPILS IN THE EFFECTIVE USE OF THE TEXTBOOK

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Training pupils in the effective use of the textbook needs to be stressed as an educational essential. With this thesis educators are in growing agreement. If it is important to instruct pupils in the proper handling of the saw, the hammer, the lathe, the sewing-machine, and the stove, in manual training and home economics courses, it is equally important—and for the same reason—that skilful training be provided in the use of those tools necessary to the learning of the so-called "academic subjects."

Not without good reason are adverse criticisms being raised against the dominant place occupied by the textbook in American education. These criticisms need not be discussed here. We all know them. As a result of this critical attitude, educators today insist upon a type of instruction that assigns a secondary place to the textbook. Projects and problems, clear-cut correlations between formal instruction and vital applications in the work-a-day world, are given acute accent in these times of industrial and commercial demands. This article is not intended as a brief in defense of the superiority of the textbook over the methods of organization in teaching referred to. But facts are stubborn, as we all know, and it is a fact that the text is still with us. Moreover, indications are not wanting that it is going to remain the instrument of education for a prolonged and indefinite time.

VARIOUS FUNCTIONS OF THE TEXTBOOK[1]

An impartial consideration of the textbook emphasizes the further fact that here we have a means of education that functions in several directions. The textbook is quite obviously a source of knowledge, a compendium and organization of a particular group of experiences that mankind has acquired by trial and error, persistent thinking, and patient experimentation. It is also a some-

[1] HALL-QUEST, *The Textbook, How to Use It and Judge It* (New York: Macmillan, 1918), chaps. v–ix.

what—and inevitably so—biased selection and interpretation of this accumulated knowledge. A man reacts to experience with an individuality itself the result of responses initiated by environmental peculiarities. While this individuality of textbooks has distinct advantages, it may become a serious handicap to comprehensive and accurate instruction if only one book is employed; hence the imperative call for a variety of reference and supplementary material in practically all courses. The textbook may serve also as a means of inspiring pupils to will to learn. In the elementary school, especially, one finds that artistically illustrated readers, for example, have a stimulating effect on the development of the will to read. A well-written, beautifully illustrated, and well-bound book kindles the love of ownership, not only of the book itself, but of its contents as well. A lengthy discussion of this viewpoint would lead to trespassing on the topic "the making of textbooks."

The foregoing points of view regarding the textbook are held by most educators and teachers. In a vague, diffident way, also, the pupils may appreciate that the textbook is a source of knowledge; that it is a rather biased interpretation of the subject treated in its pages; that it does seem interesting and perhaps even entertaining. What is needed is to take these so easily adopted attitudes and this half-conscious appreciation of the meaning of the textbook and lift them into conscious aims and methods of instruction and training. By this process habits and ideals may be developed which will fix the pupil's attitude toward books in general.

DEVELOPING APPRECIATION OF THE TEXTBOOK AS A SOURCE OF KNOWLEDGE

Occasional references to the story of the subject, the romance of its dim beginnings, and the adventures surrounding its growing complexity and wealth of modifications would probably quicken the pupil's appreciation of a particular subject as one vital in the development of the race. In a large number of schools the art department has performed a valuable and beautiful service in the hanging of worthy pictures and the placing of desirable statuary. It would, perhaps, serve both art and the appreciation of the various subjects if pictures were displayed representing episodes in the history of mathematics, science, language, home economics, etc. One week the exhibits might concentrate on mathematics, another on science, and so on. At the beginning of the subject assignments

might be given for the pupils to collect from all possible sources pictures or brief references to the historical development of the textbooks in a particular course. Possibly visits to museums or loans of museum exhibits could be employed for the same ends. If pupils, for example, could see some of the New England primers, hornbooks, blueback spelling-books, the home-made arithmetics, small, almost mapless geographies once employed, they might, by contrast, appreciate the improvements in their own textbooks. School plays might take the form of schoolbook pageants. For example, the manual-training and art departments could construct a large book, with pages seven by eight feet. The turning of each page in science (a rich field) would introduce tableaux or skits portraying a particular historical period in this subject.

It is not assumed, of course, that even with means of the kind discussed all pupils will develop an interest in the textbook as a source of knowledge. But should we not give some attention to this matter? More respect for the textbook may come in this way; but if not, we have given the pupil, at any rate, a peep into some corners of history that are all too well boarded up in the usual courses in our schools.

THE DEMAND FOR SUPPLEMENTARY TEXTS

The one-book course is slowly giving way to the more comprehensive and more truly educational organization involving the employment of several books. In general science one finds not a few teachers who assign new work in the form of topics, together with title and page references, in books provided by the school. There may be as many as six different kinds of texts referred to. Where the board of education does not supply these books, the teacher requests various groups of pupils to purchase each a different text. These books are then exchanged during the class period as the assignment may require. Similar methods are employed in literature and history.

THE TEXTBOOK, A STIMULUS OF THE WILL TO LEARN

Using the textbook as a means of creating in the pupil a certain amount of love for the subject is, to a large extent, a problem of textbook-making, but the teacher at this point may perform a very important task. The newer textbooks in practically all subjects are written in a style that, although not worthy of the name literature, is a close kin to the literary family.

If the pupil's attention is called to some of the more interesting features of the book in the beginning of the term, if the teacher gives a talk on the textbook, illustrating his remarks by referring the pupils to the textbooks lying before them, it may not be too much to expect that such a treatment of the textbook during the first few days of the term would give the pupils a favorable introduction to the book with which they are to work and live for a considerable number of days. The book may not improve on acquaintance, but we have given it a chance to make a good first impression. This sort of inspirational preview lesson is so rare that it may not be out of place to make a special appeal in its behalf in this connection. I have found in my own classes that spending the first day or two in a preview of the book such as already mentioned makes the pupil so familiar with the book that he has comparatively little trouble in finding his way through the various topics, many of which are not referred to in the table of contents or even in the index.

THE TEXTBOOK AS A TOOL

The foregoing three points of view, to repeat, are not wholly wanting throughout the rank and file of our teaching force, but the attitude toward the textbook as a tool in the handling of which the pupils need to be very carefully instructed and trained is not so common.

It has been quite generally assumed that the pupil by some intuitive knowledge is able to make economical and effective use of the text assigned him for study. My experience as a teacher has convinced me that the doctrine of intuition is dangerous in the field of study-habits. If the teacher will ask his class the day after he reads this article how many of the pupils know the exact title of the book, the author's name, the publisher, and the date of publication, he will probably find that a very small percentage, if any at all, can give accurate answers to these questions. He will find, also, upon asking, that hardly anyone has read the preface, and if he were to give a surprise quiz on the use of the table of contents and index, he probably would find that the majority of the class would fail to give correct answers.

The facts are that most people who use textbooks begin at the first chapter and read from page to page until the end of the assignment. Much of the material, especially in the lower grades, is memorized. In the high school the method of memorizing and foggy analysis of the contents is all too prevalent.

Pupils assume that, being in the form of a book, with pages and pages of type, the textbook is simply to be read. There are, of course, textbooks with which this method is of particular importance. But what is true of reading in general is true of the textbook in particular. Only as we read with a purpose can we glean clear-cut notions of what we read. This reading with a compass is all-important in connection with the textbook. The pupil needs instruction in all subjects, not merely in the English course, in the evaluating of the material that he reads. He needs training, also, in how to summarize.

Instruction and training in the clear-cut organization of material (an organization that is not merely an analysis of what the book contains) are among the neglected needs in courses other than English. Such organization involves the development of concepts enriched by related material in all courses. "Correlation" has become one of many other hackneyed terms in education. It is far from being a hackneyed practice, however, so far as the pupils' methods of studying are concerned. All too prevalent is the acute accent placed on isolated facts and fragmentary bits of information supplied in the various school "compartments." If the advantage of one-teacher grades could be retained without the many accompanying disadvantages now current in traditional grade organization, much of this concept-building process doubtless could be increased. The project-and-problem plan of instruction has obvious value in this development of concepts.

Other features in training pupils to use the textbook are the encouragement of reactions to what they read in the form of criticisms and associated ideas in general, and skill in the ready use of the index. Perhaps the first thing necessary in this connection is to establish the habit of using the index.

The following illustration of a lesson in this field will make more clear what is meant by teaching pupils how to use the textbook:

1. How many things can you tell me about this book after reading what is printed on the outside only?

2. Turn to the first page containing printing. Read it, compare it with the words on the outside of the book, and tell me what you find on this page which you did not find on the outside.

3. What is this page called and why? (If no one knows, tell the class and write term on the board.)

4. Read the preface and be ready to tell why it is needed.

The teacher should allow sufficient time for each pupil to read. Then the meaning of the word, why the author placed this brief statement at the beginning of his book, and its value to the reader, may be discussed with profit. While this type of work may not have as great significance for the understanding of history in the grades, the forming of habits along this line should begin early. Books frequently are misunderstood because readers do not know the author's point of view. To train the pupil to pay some attention to preface and title-page will prove increasingly helpful as he progresses in his education.

5. Why does a book have a table of contents, and why is it placed in the front of the book?

6. How many chapters does this book contain?

7. Read the titles of the chapters and select the one you think may give us information about the first people who were the leaders of civilization.

Having completed this preliminary study, the teacher now begins a more direct approach to the first study of the subject-matter. The following procedure has been used by the author:

1. Glance at the first page of this chapter, and without reading it tell me what you notice about this page. (Different types of print are recognized. The teacher explains the reason for using these different types, if the pupils cannot.)

2. How many paragraphs do you find under the heading in heavy type?

3. Select the proper names on this page which might be difficult for you to pronounce. (Martin Waldseemüller, Americus Vespucius, for example.)

4. Find the end of the chapter, and see if you can obtain any help.

The pronouncing list is referred to. Explain to the class that some books have this list at the end of the book rather than after each chapter. Also tell them how to find the proper pronunciation if the book has no list.

5. On page 2 (of the text), why are *two* sentences written in different type? Give term for this.

6. Quickly read the three paragraphs under the first topic, and decide whether they are of value to us in collecting information concerning our problem. (Obtain the opinion of the class by asking how many think it is valuable, and how many do not. If the majority of the class have made the right decision, call upon a pupil who is incorrect or uncertain to give his reason; then help him to see why he is wrong. Write upon the board a brief statement of any fact recognized by the pupils as having a direct relation to the problem under consideration. At every step of the lesson, encourage the pupils to ask questions. It is the best proof we can have of definite, purposive thinking.)

7. In the same way, read the next two paragraphs.

8. Consult the small map on the next page for location of the Nile and Euphrates rivers—Egypt and Chaldea. Then locate these two places, with relation to America, on a wall map of the world.

9. Before reading about the Egyptians, question the class to aid them in determining the important facts for which they should look. Some brief outline such as the following should be written on the board before beginning to read:

The Egyptians.—Who they were.
Where they lived.
What they did.

10. Under the topic "Egyptians," decide how many paragraphs or pages are devoted to the subject.

11. When should we make a careful study of the illustrations which a book contains?[1]

ESTABLISHING HABITS OF STUDYING IN THE ELEMENTARY SCHOOL

Many teachers who have read the foregoing suggestions may reflect that considerable time is now being devoted to this sort of work. Doubtless much of this work is done incidentally or, perhaps, accidentally. What seems to be needed is a carefully organized series of lessons in this type of training. There must be a conscious effort to give pupils instruction in the economic and effective use of the textbook and regarding other texts that may be used for educational purposes. Considerable attention is given by our educators to economy of time in school work. So far the effort has been confined to the determining of what are proper minimum essentials in the several subjects. But of equal importance is a type of course that gives organized recognition to the need of teaching pupils how to work quickly and also accurately. The amount of time wasted in the class period and in the home-study period is nothing short of appalling.

Doubtless many teachers are loathe to believe that instruction of the type considered in this article has a legitimate place in the elementary school, where the time appears to be all too short for what is now required of the children. Others believe that work of this sort assumes mental development beyond that attained or attainable by young pupils.

Answers to these objections are easily made. With the reduction of the present quantity of subject-matter there will be ample time to form habits of work in the fields referred to. Investigations by Bonser, Stone, Earhart, and Miss Grace Day agree that the reasoning ability of children is more fully developed than is generally believed. The elementary school is the logical level where training in the use of educational tools, of the sort discussed, should begin.

Two factors in this type of instruction are all-important. One of these is the well-trained teacher who can instruct and direct pupils to react effectively to the textbook. Little attention has been given to this matter in teacher-training schools. It must receive increasing and expert attention. The other factor is sufficient money for equipping each class with adequate reading

[1] MABEL E. SIMPSON, *Supervised Study in History*. New York: Macmillan, 1918.

material. Considerable sums of money are spent on equipment in science, manual training, and home economics courses, and rightly so. A proportionate amount should be set aside for the purchase of supplementary books in generous quantity in order that each pupil may have opportunity to get a broad training in concept-building.

The foregoing suggestions, if given expression in the teacher's plans for a semester's course, might be stated in the following list:

SUGGESTED PROGRAM OF TRAINING IN THE USE OF THE TEXTBOOK

I. FIRST WEEK AND ON SPECIAL OCCASIONS:
   1. A bird's-eye view of the book, noting title, name of author, publisher, date of publication, table of contents, special features of type and illustrations, and general arrangement of material.
   2. Art exhibits, showing origin and development of the book. Also museum exhibits showing the evolution of the schoolbook. See Johnson, *Old-Time Schools and School Books* (Macmillan).
   3. Pageants and tableaux, giving dramatic presentation of the historical episodes in the evolution of the schoolbook.

II. DURING ASSIGNMENTS AS MAY BE NEEDED:
   1. Directing the pupil's attention to the outline of contents preceding or following the chapter; directing the pupil in the effective employment of these aids to study.
   2. Training the pupil to summarize a paragraph, a page, or a longer section of material, this to be done not only in English courses, but wherever the textbook presents matter that should be so treated. Aim here is training in effective recall.
   3. Instruction and training in the effective use of the index as a guide in organizing material within one book or as found in several books. Definite aim of concept-building.
   4. Direction and drill in selecting or evaluating material. Inasmuch as this depends upon a rich background or experience in a particular subject, only simple analysis can be expected at first. The pupil needs, however, definite directions in procedures other than mere memorizing of what he has been assigned to learn.

III. DURING DAILY REVIEWS (RECITATIONS), SPECIAL REVIEWS, AND PERIODS OF EXAMINATION:
   1. Testing the pupil's ability to use the index and his skill in making summaries and organization of subject-matter.
   2. Questions on interpretation of contents, evaluation of material (with books open).

      (Most examinations stress memory questions. If abilities of the sort here included are tested, the pupils' progress in attaining skill in independent studying can be better determined than by the usual memory questions.)

HELPING TEACHERS IN SERVICE

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In an effort to improve the geography work in some of the city schools of Iowa, the Extension Division of the Iowa State Teachers College has, during the past winter quarter, sent out a member of the faculty to do what may be termed consultation work in that subject. Although a comparatively new undertaking here, it seems from present indications to be an effective method of helping the teachers bring their instruction in geography to a little higher standard.

One who is a specialist in geography and who is putting his whole time and thought on that science naturally has a very different view of the subject as a whole and the ends to be gained from its study than has one who deals with it merely in a single grade and then repeats the same subject-matter the next year. A teacher in the grades can spend at best not more than one-eighth of her preparation time each week on this branch; hence any help which will enable her to use this short time more efficiently is in most cases very welcome. Many city superintendents are so busy with the executive duties of the school that they have little time to outline a detailed course of study in all subjects even if they had the expert knowledge along all lines to enable them to do so. Therefore, most of them are glad to have the suggestions which have come after a study of the geography-teaching in their schools.

The plan used was as follows: A member of the geography faculty who was taking a term off from regular instructional work in the college spent two to three days in any town whose superintendent had expressed a wish for help. The first day the instructor spent most profitably in visiting classes, obtaining, when possible, two cross sections of the geography work of the city from two different buildings. At most places the city superintendent notified the principal of a building that the instructor was coming and the program for the half-day was so arranged, or disarranged, that classes in geography were heard at every period. The whole visit was much more effective where the superintendent visited the

classes at the same time. In the general meetings with the teachers, he was then in a position to understand more fully the points which were raised in the discussions, to appreciate the questions asked by his teachers, and to decide the justice of criticisms which were made.

At the close of the first day, usually at half-past three in the afternoon, the teachers met for a conference. The most helpful work of all was done at this meeting. The general aim of geography-teaching was presented, and questions which the teachers brought up were discussed. One theme was necessary everywhere, and that was the use of the globe and the map. A discussion of the problem method was usually requested. No criticisms of individual teachers were made at any place, as that was not the purpose of the consultation, although practically everywhere teachers were very free in asking to have faults in their teaching pointed out. The second day's work varied widely in the different cities. In one of the largest school systems all teachers of geography dismissed their rooms and met at eleven o'clock to see a demonstration lesson with a seventh grade. In the afternoon, two hours were spent in going over the city course of study with the superintendent. At half-past three the teachers all met again for conference. This superintendent and his corps of teachers were most gratifying in their eagerness for help and in their appreciation of suggestions.

At another place the second day was spent in demonstration teaching in the various buildings, four or five teachers coming in to watch each of the classes. At half-past three a class was taught in a central building before all the geography teachers of the town. At still another place conferences were held on Saturday.

After carrying this work farther and waiting for some time to elapse so that the teachers visited may have opportunity to make use of the suggestions given, one will be in a position to judge of the permanent value of the plan. A few general observations even at this date may not be out of place.

One defect in geography-teaching has been evident everywhere—we introduce the map too soon, do not teach its use thoroughly enough, and then do not use it effectively in the grades which follow. The writer is convinced that when the map is introduced too soon the child's sense of real direction is not developed as it might be, and he is handicapped by this lack of development in all the geography work for the years to come. For example: The

fourth grade, first half-year, is to study Iowa; therefore the map of Iowa is hung up in the room and the children begin their mapwork by pointing to the Mississippi and the Missouri rivers, Illinois, Minnesota, and other boundaries. This is purely memory work as you can prove by asking a few questions. Why not at this stage omit the map and point in the actual direction of these various features? To be able to point out the Mississippi on the map is no evidence that a child has any notion of the direction in which it lies from his schoolroom. It is a mistake to introduce the child to a map of the state until he is familiar with the map of North America and can read maps easily.

Not everyone will agree with this, we know. Still the arguments which can be presented must have some weight. The pupil does not really need the map until the latter part of the fourth year or the beginning of the fifth. Then the globe should be taught before the map. If this is done properly and thoroughly, we shall do away with the old error, "up north and down south," as north and south will be connected in the child's mind with the poles. If he is taught to go south on the globe by following a meridian away from the north pole, he will soon realize for himself that to go south on the map does not necessarily mean to go toward the bottom of the page. One needs but take an average sixth grade and ask the members to prove from their maps the direction in which the Niagara River flows to realize how deeply "bottom and top of map" has sunk in.

If the teaching of the globe is followed by the use of the physical map of North America, and the symbols and directions the class has just learned are transferred to this, the work is simple. If following the ordinary textbooks, the class is ready to take up the study of North America in Book I, a great deal of this work may be done in connection with the map-teaching so that no time need be lost. The big features of coast-line, the location of highlands and lowlands, of river basins, and river directions may all be brought out, while the main purpose to teach the pupils to read a map intelligently will be accomplished.

Educational Writings

I. COMMENT ON CURRENT EDUCATIONAL PUBLICATIONS

A history of American education.—Professor Cubberley has written the first book[1] which can in any proper sense be described as a history of American schools. His work is characterized by a large body of definite and exact information about the details of school legislation and practice. It is further characterized by illuminating comments on the general social and economic conditions which surrounded each epoch in the evolution of the American system. Moreover, the book is successful in a most unusual degree in focusing the student's attention on present-day problems. Contrasts and comparisons with present conditions are constantly offered and presented with telling force as motives for historical study.

Examples which make concrete the comments presented above can be found in abundance. Especially strong in factual details are such chapters as the seventh entitled "The Battle to Extend the System" which deals with the rise and growth of higher schools, and the fifth, "The Battle for Free State Schools," dealing with the development of the present financial policy of public schools.

Social conditions affecting the rise of the present-day type of schools are vividly set forth in such chapters as the eleventh which deals with the rise of cities and the factory system.

The last third of the book beginning with chapter x, "The Reorganization of Elementary Education," brings the reader by long sweeping steps to the modern problems of school organization and instruction.

Such a book could be written only by an author who has familiarized himself with educational problems sufficiently to have pronounced views. These views operate as interpretative theories and they appear here and there in the book with such emphasis that there is great probability of their being accepted as facts. Thus, Professor Cubberley has come to the opinion that the American schools of the first half of the nineteenth century were purely native products.

At times he has to combat the facts which he sets forth on one page in order to maintain this theory on the next. The present reviewer is sure that his theory is wrong in this case. The matter would be of less moment if it did not lead to a series of statements about the grading of elementary schools and the breach between high schools and the elementary grades which confuse rather than clarify certain current reforms, especially the junior high school.

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[1] Ellwood P. Cubberley, *Public Education in the United States.* Boston: Houghton Mifflin Co., 1919. Pp. xxv+517.

A brief review is hardly the place to argue this matter to a finish. It is mentioned for the purpose of illustrating a characteristic of Professor Cubberley's book which is at once a virtue and a defect. The book presents an interpretation of the American school system as viewed by a facile writer and a broad student of educational problems. When the interpretation gets started it moves with such momentum that it carries everything before it. Sometimes it sweeps away facts which are in reality landmarks not to be lightly removed.

In spite of this—indeed, because of this—the book is readable in every page. It is full of fruitful suggestions and stimulating discussions. It will go far to bring the history of education back as a useful subject for the training of teachers.

CHARLES H. JUDD

A book on types of elementary-school methods.—Professor Freeland's book[1] purports to show elementary-school practices in progressive school systems. While it presents a good deal of material of that type by way of illustration, the book is fundamentally a presentation of certain types of elementary-school methods. At the same time considerable attention is given to the selection of subject-matter, particularly of reading, writing, spelling, grammar, arithmetic, and hygiene.

On the side of methodology the discussion is mainly confined to problems, projects, motives, interests, teaching in ways that will conserve rather than injure the health of the students, and the discovery of methods that will take care of the individual needs of the students and at the same time be socializing and lend themselves to those methods of training.

In connection with each of these topics, first the general theory is presented. This is then usually rather fully illustrated from present-day practices in connection with different school subjects. A good many detailed suggestions are made by way of helping the practical worker to make use of the special theory advocated.

The author is a man who has had long practical experience in the educational field, both as a superintendent and as a director of practice training schools in teachers' training institutions. As a result, he is able to keep his treatment of questions very close to the practical labors of classrooms. He is thus able to present many valuable suggestions to those striving to make immediate improvement in their classrooms.

The book shows a full appreciation of modern tendencies and developments; but in his analyses and his exposition, it appears that the author, like most of the rest of us who have had long experience in connection with traditional school practices, has great difficulty in extricating himself from the grooves of traditional thinking, and in a free and untrammeled way, taking the social point of view in the discussion of methods and curriculum. The methodologist must be at a great disadvantage until the curriculum-maker has socialized the curriculum.

J. F. BOBBITT

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[1] GEORGE E. FREELAND, *Modern Elementary School Practice*. New York: Macmillan, 1919. Pp. xiv+406.

A new book on the reconstruction of the basic school subjects.[1]—*Socializing the Three R's* begins with two highly stimulating and illuminating chapters dealing with current movements and tendencies in the social world of today and with the strategic position of education in its relation to these various social movements. With such particularity as space allows, fundamental tendencies are pointed out in the fields of industry, citizenship, political life, national and international relations, and in the general cultural situation. The writer is gifted with an unusual felicity of expression and a singularly discerning sense of social values and relationships. She sees education as a part of the general social process and not as a thing apart which must be correlated or co-ordinated with the community life.

After this most auspicious beginning, the book then takes up a discussion of certain school subjects and activities: reading, writing, spelling, grammar, arithmetic, history, arts, general science, manual training, and socializing play. Obviously, it is attempting a large task to show how so many subjects are to be socialized within so brief a space. All of the treatment reveals a singular insight into the problems of socializing these various studies and is well worth the reading by those who have not socialized their valuations, their thought, and their practices in these subjects. The treatment is particularly valuable, however, for presenting certain insights and suggestions—and presenting them effectively. There is, however, no attempt at treatment which is systematic, proportioned, or complete. The discussion is more important for inspiration, suggestion, and for developing a social point of view than it is for understanding of the professional program involved in carrying out these same suggestions.

The author's thinking is not influenced by traditional thought and practice. She has looked squarely to social needs, and to children's needs, and has made her deductions according to the needs and social possibilities without reference to the things that we have been doing. Even in the matter of buildings and equipment, in a final chapter, she makes suggestions that are wholly revolutionizing in their implications. Her argument is convincing because it is presented as the logic of current social tendencies, unconfused by thought of, or reference to, current practical administrative problems.

J. F. BOBBITT

A short book on the junior high school, by a superintendent.—The purpose which Mr. Bennett, who is the superintendent of schools at Pomona, California, where there is one of the best junior high schools in the West, has in writing his new book,[2] is best described by quoting from the preface [page vii]. "This book is put forth as a guide for the study of the junior high-school movement. It is put forth largely as a pathfinder." It is not an attempt, as the author frankly says, to make a scientific study of the question, for he feels that "The junior high school is too new an institution to have had time and opportunity for the accumulation of such scientific material."

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[1] RUTH MARY WEEKS, *Socializing the Three R's*. New York: Macmillan, 1919. Pp. 182.

[2] G. VERNON BENNETT. *The Junior High School*. Baltimore: Warwick and York, Inc., 1919. Pp. xi+224.

This book seems to fall logically into four parts. Part I has to do with the problems of the junior high school and their solutions, objections to the movement, and the effect of the junior high school upon the elementary grades. Part II deals with the curriculum. Part III is concerned with the organization and administration of the junior high school. In this division he discusses the teachers, how to teach in the junior high school, and the administration of it. Part IV is made up of two chapters in which he speaks of the relation between the senior high school and the junior college, and gives his ideas of what should constitute an ideal junior high school.

The book is accompanied by a good appendix giving courses of study from Los Angeles, Cincinnati, Houston, Detroit, and Pomona. There is also a very good bibliography which is arranged alphabetically by the kind of publication in which the contribution appears.

Mr. Bennett's opinion on one of the grave and serious questions confronting the junior high school is seen in his chapter on the Course of Study. He believes in freedom of election under competent guidance. On page 78 he remarks, "We wish to advocate quite a large freedom of election by the pupil under the guidance of parent and teacher or vocational adviser." With this view many are in favor. Again he says on page 80, "We must not forget that the junior high school is a trying-out place where the young people are expected to find themselves."

One cannot help but feel that the lack of definite data on the various phases of the junior high school constitutes a weakness in the book. More and more we are coming to feel the need for constructive studies of the problems which are pressing for solution. Mr. Bennett in discussing the place of mathematics in the junior high school states that algebra should be introduced in the seventh grade. On page 94 he says, "Out of a class of thirty poorly prepared seventh graders, probably twenty will do the algebra satisfactorily." The objection which is made to this type of statement is that it is an expression of opinion. It seems that he would have greatly strengthened this discussion if he had given tables showing upon what he based his opinion.

Superintendents and principals, however, who are looking for help in the organization and administration of their junior high schools will do well to read this volume. It has many suggestive ideas.

PAUL C. STETSON

SUPERINTENDENT OF SCHOOLS
MUSKEGON, MICHIGAN

Two new publications on elementary-school spelling for teacher and principal: (1) *an important manual on the teaching of spelling*;[1] (2) *a new speller*.[2]—Professor Tidyman's manual is a very valuable summary and interpretation of the studies on the standardization, psychology, and teaching of spelling that have been made to date. The book makes available to teachers the results of ninety investiga-

[1] F. W. TIDYMAN, *The Teaching of Spelling* (School Efficiency Monographs) Yonkers-on-Hudson, N. Y.: World Book Co., 1918. Pp. ix+178. Papers. $0.90.

[2] H. C. PEARSON and H. SUZZALLO, *Essentials of Spelling*. New York: American Book Co., 1919. Pp. xii+196.

tions, material which has been scattered through many educational publications. His book deals with five major problems.

1. The first of these is the improvement of methods of determining the content of spelling. He interprets the best investigations on word-lists, on the difficulty of words, on misspellings, classes of words, grading, and grouping words.

2. The psychology of spelling is discussed, investigational material being worked over and interpreted by Dr. Tidyman in the light of his own experimentation and practical experience. The material deals with such problems as the mental processes involved in learning to spell, spelling as habit formation, and the use of mental imagery.

3. The pedagogy of spelling is discussed in great detail, the presentation making use of the best investigational conclusions. The teacher will find well-organized and carefully interpreted material in the pedagogical chapters: for example, the way in which the presentation of words rests on general principles suggested by psychology; the selection of exercises and methods; important conclusions concerning pronunciation, meaning, and use; the psychology of various methods of presentation. Helpful chapters are included on methods of training children in independent study, and on the prevention and treatment of errors.

4. The fourth major problem discussed in the book is that of testing and measuring spelling efficiency. The various standard scales and tests are discussed and their limitations and proper uses are pointed out helpfully.

5. The book supplies concrete spelling plans, a minimum word-list of 1,254 words common to certain concrete investigations of spelling content, and a very complete and well-organized bibliography.

The second recent publication on spelling is Pearson and Suzzallo's *Essentials of Spelling*. This is the fourth speller to appear which is based on scientific investigational work. It will take a place with the *New World Speller*, *The Everyday Speller*, and the *Aldine Speller* in this respect. Like the first of these it bases its minimum content of 2,000 required words and 1,000 supplementary words upon the scientific studies of adults' and children's vocabularies which have been made during the last few years, and upon studies conducted by Mr. Pearson in the Horace Mann School. Likewise in the grading of the material, organization of reviews, and psychological presentation of material, it embodies an application of the important experimental findings of recent years. This text with Dr. Tidyman's manual typifies very well the movement for the improvement of the teaching of school subjects through scientific reconstruction of both course of study and methods of teaching.

Two new types of supplementary reading material for the elementary grades.— Two new books for elementary-school pupils have just appeared which illustrate strikingly how school people are providing motive for reading historical material. The first, a book of plays for children,[1] utilizes the dramatic instinct to sustain continued interest in the historical development of our country. The second[2] supplies the background of history concerning the methods by which peoples of other lands and in earlier times used numbers.

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[1] ELEANORE HUBBARD, *Little American History Plays for Little Americans*. Chicago: Benjamin H. Sanborn & Co., 1919. Pp. vii+482.

[2] DAVID EUGENE SMITH, *Number Stories of Long Ago*. Boston: Ginn & Co., 1919. Pp. vii+136.

Miss Hubbard's book is a very interesting and well-written series of plays to be read aloud and acted by children of the third and fourth grades. The plays are very short. Each is a unit by itself and can be used as a single reading lesson. They are adapted to the vocabulary and interests of children of that age. They are organized so as to cover the periods in the history of our country of discovery and early settlement, the Revolution, the War of 1812, the expansion of the nation, the Civil War, and the present time. They lay much emphasis, however, on economic, industrial, and social features. Each play is accompanied by suggestions for staging, and by questions which are planned to make pupils think about the problems that have been presented in the plays.

Professor Smith's *Number Stories of Long Ago* is a series of ten short stories describing the methods by which the peoples of earlier times counted, wrote numbers, added, multiplied, divided, and used fractions. The stories also include various number puzzles and other types of curious numerical problems. The setting of the book is adapted to the interests of children in the elementary school, and should provide successfully a method of making the recital of historical facts concerning number of real interest and permanent value to children. Something of the history of writing-materials which is connected properly with the story of the development of numbers is joined with the latter. The chapters have been so written that they can easily be read aloud to pupils. Accompanying each story is a question box, giving a number of questions designed to draw out the pupils' ideas concerning the story which has just been taught.

A book in the "home-project" method of agricultural instruction.—Educators have been interested in bringing about a closer relation between the school and the community. Mr. Stimson, out of his long experience with agricultural education in Massachusetts, presents, in a new book,[1] practical suggestions as to the details of desirable organization and administration in the field of agricultural training. He gives some space to a general discussion of vocational agricultural education and to a presentation of the details of his plan for "home-project" versus the "subject method" of instruction. He also discusses in detail the method of treating "home-projects" as units of instruction. The book contains 307 illustrations bearing on the details of "home-project" teaching and supervision. A very complete reading list is included.

Throughout the book the author makes it quite clear that the "home-project" may be so administered as to call for the highest type of intellectual reaction on the part of students, and at the same time afford profitable employment that will contribute to later vocational selection and service.

Mr. Stimson has not only brought together material that is invaluable to teachers and administrators of agricultural subjects, but he has shown in an effective way the kind of thing that must be done in connection with other lines of training if the schools are to make contact with community problems, and if they are to function in any large way in meeting the vocational needs of students. School administrators and teachers generally would do well to carry over into the

[1] RUFUS W. STIMSON. *Vocational Agricultural Education—By Home Projects.* New York: Macmillan, 1919. Pp. xxxviii+468.

work of the school some of the wholesome contact with the world of affairs suggested by this publication.

E. T. FILBEY

A high-school text in applied psychology, ethics, and general philosophy.[1]—This book is a very interesting attempt to write a psychology of a practical sort for the high-school level. The organization of the book does not follow the ordinary classification of mental processes in any close fashion, but it does in general follow the usual order from the sensory and perceptional process to the idealational and volitional.

Reference to the character of one or two of the chapters will illustrate the method of approach. The first chapter is entitled "How Our World Gets Enriched." The author begins by showing that the physical world presents many possibilities of experience, and proceeds to analyze these differences by showing that much of the experience is contributed by the observer himself in the way of interpretation. In the next chapter, entitled "How Misunderstandings Arise," these differences in interpretation are elaborated as a means of showing how persons may differ in their attitudes and opinions. False perception or illusions are next discussed as a further example of the contribution to experience which is made by the mind itself. Again, this fact of apperception is related, in chapter iv, to the social quality of tact. This may serve to show how various topics are developed. There are further chapters on "Race Apperception," "Concepts and How We Make Them Clear—Careful Use of Words," "The Pitfalls of Reasoning," etc. Several later chapters are less closely related to formal psychological discussions and constitute a group each of which describes a type of the strong self. The individual titles are "The Social Lion," "Selfishness," "Independence," "The Popular Hero," and "One's Life in His Work." Other chapters are entitled "How Work May Be Saved from Drudgery," "Loyalty," "Choosing a Vocation," "Psychology of Periods of Discouragement," and "The Strong Man's Religion." This will give an idea of the scope of the book.

The treatment, in general, is clear and interesting. The author frequently introduces quotations from literature for the purpose of making emotional appeal. In this way he aims to adapt the book to the human interest attitude of the high-school student. Whether he has been successful will have to be determined by trial rather than by mere examination, but the book has been written with considerable skill and appears to give promise of success. The desirability of some such text for high-school students is clear. The usefulness of the book might, perhaps, be increased by the addition of more specific and detailed instructions in methods of work, particularly in study.

FRANK N. FREEMAN

A new text in educational psychology.[2]—The field of educational psychology may be divided into four or five divisions. Among the major parts of the field

[1] CHARLES CLINTON PETERS. *Human Conduct.* New York: Macmillan, 1918. Pp. xii+427.

[2] DANIEL STARCH. *Educational Psychology.* New York: Macmillan, 1919. Pp. ix+473.

are the psychology of learning, the instincts, the mental development of the child, and the psychology of learning in school subjects. To these may perhaps be added the technique of mental testing. The subject of individual differences is sometimes treated as a separate division, but it is clearly related to each of the others, and therefore seems best treated as a phase of each of the main divisions. The present book treats of a larger number of these phases of the whole subject than is commonly found in texts on educational psychology. It includes the instincts under the title "the native equipment of human beings," the psychology of learning in general, and the psychology of learning the school subjects. There is a brief review of methods of testing in the first part. The only large topic which is omitted, therefore, is the mental development of the child. There may perhaps be practical justification for the omission of this topic in the fact that it is often treated in a separate course on child study. From the point of view of the development of courses in educational psychology, however, it would seem desirable to include in a general treatise this phase of the subject along with the others. While the omission of the subject of individual differences as a separate topic is desirable, it should receive considerable emphasis in connection with all of the topics of discussion. In the present text it is incorporated as an integral part of many of the subjects of discussion. The book is on the whole a clear and competent summary of the scientific material in the field of educational psychology. The author has at his command a clear expository style. His discussion is descriptive rather than controversial. In this respect his book is well adapted as an introductory text. In degree of difficulty, it is suited to the college level.

The nature of the discussion may be shown in somewhat greater detail from the topics of the individual chapters. In the first part the discussion opens with a catalog of the human instincts. This is followed by the presentation of individual variations in general and a discussion of the nature of their distribution. In this connection the probability curve is described and illustrations are drawn from biological and mental traits. The discussion of distribution is followed by a brief account of the correlation between traits. A chapter follows upon sex differences, and upon inheritance. This part is completed by a description of the technique of mental testing. The differences in intellectual capacities with age are of much more importance for education than are sex differences, particularly as the author agrees with the best scientific evidence in minimizing sex differences in intellectual capacity. It is surprising, therefore, that age differences do not appear in this discussion. The psychology of learning is treated somewhat in the conventional manner, beginning with the discussion of sensation, sensory defects, etc., and continuing with a description of various examples of learning, using as illustrations some of the well-known experiments. Memory is included in this discussion. It seems to the reviewer that practical demands are best met by a discrimination between some of the outstanding types of learning such as sensori-motor, memorizing, analysis, etc. It is difficult to apply the same principles of method to all these types. A practical chapter is introduced at this point on how to study. In this connection the author's practice in including extensive quotations may be commented on and called into question. Whipple's thirty-eight rules of studying are reproduced. Credit is of course given, but it

is questionable whether it is an altogether correct practice to transfer so much material bodily from another author. In the section upon learning the school subjects, a good deal of material of a directly practical nature is included. Thus the discussion verges very closely upon the field of methods. It is difficult, however, to draw a sharp distinction between the two, and it may be that this practice is justifiable.

On the whole the book is a much more direct attack upon the distinctive field of educational psychology than is common. It is very much to be hoped that books of this character may more and more take the place of pure psychology for students of education. The author has brought together in well-organized form a large amount of up-to-date material, and has presented it in clear style. The book will undoubtedly prove decidedly useful in courses in educational psychology.

FRANK N. FREEMAN

A monograph upon experiments with a new type of tests.[1]—This is a highly technical monograph upon a comparatively new type of experimental study of children. The general mental processes which are investigated are old and familiar. It is simply the process of forming associations, but the method by which this information is studied is new. Its chief novelty consists in the fact that it dispenses altogether with the verbal directions. A conditioned reflex is a reflex which becomes attached to a new stimulus because this stimulus has been associated with one which instinctively arouses the response. Thus, the sensing of food causes the child to open his mouth to receive it. This is the natural reflex. If the child's eyes are bandaged a certain definite period before he is given the food, he will in time learn to open his mouth after his eyes have been bandaged, but before he has sensed the food. Bandaging his eyes will lead him to anticipate the food. The association of opening his mouth with being bandaged is the conditioned reflex. This process has been studied by Russian investigators—notably Pavlov and Krasnogorski. Miss Mateer has attempted to determine the value of the method as a means of diagnosing the mental status of children. The investigation is of value as a suggestion of possible future developments. Comparisons were made between the rate of learning, the permanence of learning, the rate of breaking down the reflex and of relearning it again, with other tests, such as the Binet test, form-board tests, strength of grip, and others. The author believes that the method is of some significance as a method of diagnosis, particularly that the rate of unlearning is an important measure of ability. No final conclusions can as yet be drawn, but the method may ultimately be developed so as to give a somewhat more exact and objective measure of learning ability than we now have.

FRANK N. FREEMAN

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[1] FLORENCE MATEER. *Child Behavior* (a critical and experimental study of young children by the method of conditioned reflexes). Boston: Richard G. Badger, 1918. Pp. 239.

II. CURRENT PUBLICATIONS RECEIVED DURING THE PAST TWO MONTHS

A. GENERAL EDUCATIONAL METHOD, HISTORY, THEORY, AND PRACTICE

ALEXANDER, HARTLEY BURR. *Letters to Teachers.* Chicago: Open Court Pub lishing Co., 1919. Pp. 253.

BENNETT, G. VERNON. *The Junior High School.* Baltimore: Warwick & York, Inc., 1919. Pp. xi+224.

BUCKNER, CHESTER A. *Educational Diagnosis of Individual Pupils.* New York City: Teachers College, Columbia University, 1919. Pp. ix+93.

CARY, C. P. *The State and the Public Schools.* Madison, Wis.: State Department of Public Instruction, 1919.

Course of Study—Baltimore County Schools. Baltimore: Warwick & York, Inc., 1919. Pp. viii+698. $2.75.

CUMMINS, ROBERT ALEXANDER. *Improvement and the Distribution of Practice.* New York City: Teachers College, Columbia University, 1919. Pp. vi+72.

DEWEY, EVELYN. *New Schools for Old.* New York: E. P. Dutton & Co., 1919. Pp. xi+337.

DOWNING, ELLIOT ROWLAND. *A Source Book of Biological Nature Study.* Chicago: University of Chicago Press, 1919. Pp. xxi+503. $3.00.

FREELAND, GEORGE E. *Modern Elementary School Practice.* New York: Macmillan, 1919. Pp. xiv+408.

FRETWELL, ELBERT KIRTLEY. *A Study in Educational Prognosis.* New York City: Teachers College, Columbia University, 1919. Pp. 55.

MCFEE, INEZ N. *The Teacher, The School, and the Community.* New York: American Book Co., 1918. Pp. 256.

MINER, JAMES BURT. *Deficiency and Delinquency.* Baltimore: Warwick & York, Inc., 1918. Pp. xiv+355.

MOORE, ERNEST CARROLL. *What the War Teaches about Education.* New York: Macmillan, 1919. Pp. x+334.

National Education Association of the United States—Addresses and Proceedings of the Fifty-sixth Annual Meeting, Pittsburgh, 1918.

RICHARDSON, ROY FRANKLIN. *The Psychology and Pedagogy of Anger.* Baltimore: Warwick & York, Inc., 1918. Pp. 100.

Rockefeller Foundation—Review for 1918. Public Health in Many Lands, Centers of Medical Education, War Relief and Welfare of American Troops. New York, 1919.

SANDIFORD, PETER. *Comparative Education; Studies of the Educational Systems of Six Modern Nations.* New York: E. P. Dutton and Co., 1918. Pp. x+500.

STIMSON, RUFUS, W. *Vocational Agricultural Education.* New York: Macmillan, 1919. Pp. xxxv+468. $2.50.

WEEKS, RUTH MARY. *Socializing the Three R's.* New York: Macmillan, 1919. Pp. vii+182. $1.12.

W.E.A. Year Book—1918. London: The Workers' Educational Association. Pp. 507.

B. BOOKS PRIMARILY FOR ELEMENTARY-GRADE TEACHERS AND PUPILS

BAILEY, CAROLYN SHERWIN. *Stories of Great Adventures.* Springfield, Mass.: Milton Bradley Co., 1919. Pp. 222.

CHAFFEE, ALLEN. *The Adventures of Twinkly Eyes the Little Black Bear.* Springfield, Mass.: Milton Bradley Co., 1919. Pp. 183.

COLBERT, EMMA and BAYLOR, ADELAIDE S. *Young America's First Book.* New York: The Century Co., 1919. Pp. 166. $0.60.

CORNEY, EVIE and DORLAND, GEO. W. *Great Deeds of Great Men.* Boston: D. C. Heath & Co., 1919. Pp. vi+236.

MCVENN, GERTRUDE E. *Good Manners and Right Conduct.* Boston: D. C. Heath & Co., 1919. Book I, Pp. xii+250; Book II, Pp. xi+253.

MOORE, ANNIE E. *Pennies and Plans.* New York: Macmillan, 1919. Pp. iv +124. $1.12.

SPAULDING, FRANK E. and BRYCE, CATHERINE T. *Learning to Read.* New York: Newson & Co., 1918. Pp. 243.

SPAULDING, FRANK E. and BRYCE, CATHERINE T. *The Aldine Readers.* New York: Newson & Co., 1918. Four books.

C. BOOKS PRIMARILY FOR HIGH-SCHOOL TEACHERS AND PUPILS

BREASTED, JAMES H. *Survey of the Ancient World.* Boston: Ginn & Co., 1919. Pp. xi+417.

BRIGGS, THOMAS H. *A Second Book of Composition.* Boston: Ginn & Co., 1919. Pp. xi+516.

CODY, SHERWIN. *100% Self-Correcting Course in English Language.* Rochester, N. Y.: The Sherwin Cody School of English, 1918. 25 lesson pamphlets.

COOK, MELVILLE T. *Applied Economic Botany.* Philadelphia: J. B. Lippincott Co., 1919. Pp. xviii+261.

CURTIS, GEO. WM. *Prue and I* (edited by Brecht). New York: Macmillan, 1919. Pp. 224. $0.32.

DAVIS, ROY. *Practical Exercises in English.* Boston: Ginn & Co. Pp. 104.

GOFF, EMMET S. and MAYNE D.D. *First Principles of Agriculture.* New York: American Book Co., 1918. Pp. 272.

HOFFMAN, HORACE A. *Everyday Greek.* Chicago: University of Chicago Press 1919. Pp. ix+107. $1.25.

LABICHE ET MARTIN. *La Poudre aux Yeux* (edited by C. P. Lebon) New York: Macmillan, 1919. Pp. viii+122. $0.48.

MATTHEWS, BRANDER. *An Introduction to the Study of American Literature.* New York: American Book Co., 1918. Pp. 268.

NITCHIE, ELIZABETH. *Vergil and the English Poets.* New York: Columbia University Press, 1919. Pp. viii+251. $1.50.

NORTON, HELEN RICH. *A Textbook on Retail Selling.* Boston: Ginn & Co., 1919. Pp. xi+283. $1.20.

PAYNE, LEONIDAS W. JR. *History of American Literature.* Chicago: Rand McNally & Co., 1919. Pp. x+576.

PAYNE, LEONIDAS W. JR. *Selections from American Literature.* Chicago: Rand McNally & Co., 1919. Pp. xiv+636.

RHODES, CLARA L. and BROADHURST, JEAN. *Verse for Patriots.* Philadelphia: J. B. Lippincott Co., 1919. Pp. xi+367.

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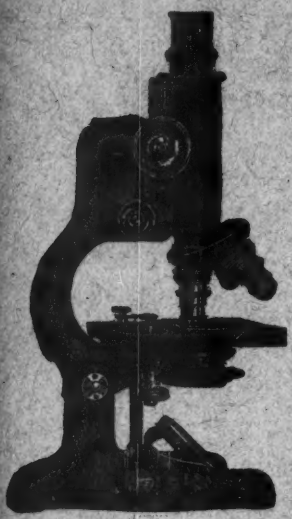

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